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# REPORT

AND

## MINUTES OF EVIDENCE

TAKEN BEFORE THE

### SELECT COMMITTEE OF THE SENATE

APPOINTED TO

INQUIRE INTO AND REPORT ON THE ROUTE

OF THE

## CANADIAN PACIFIC RAILWAY

FROM KEEWATIN WESTWARD, &c.

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Printed by Order of the Senate.

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1877.



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## REPORT.

THE SENATE,

COMMITTEE ROOM,

Friday, 27th April, 1877.

The Select Committee appointed to enquire into and report,—

1st. As to the difference in length between the line of the Canadian Pacific Railway from Keewatin westward, and a more southern line by Winnipeg and south of Lake Manitoba to the nearest point common to both lines.

2nd. As to the cost of construction of each line; also the fitness of land for settlement along each line respectively, and also for the greater chance of an immediate remunerative line, with power to send for persons, papers and records, and which was also authorized "to examine into all the questions relating to the purchase of the property at Fort William for a terminus to the Canada Pacific Railway and to send for persons, papers and records, to examine witnesses under oath, and to report thereon to the Senate with all convenient speed this Session"; beg leave to make the following as their First Report on the subject-matter of the latter portion of the foregoing Order of Reference.

Your Committee having heard certain evidence, find it too late in the Session to continue the investigation, and therefore recommend that all further proceedings in relation thereto be deferred until next Session, then to be proceeded with in accordance with instructions from your Honorable House.

All which is respectfully submitted.

M. A. GIRARD,

*Chairman.*

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## MINUTES OF EVIDENCE.

THE SENATE,

COMMITTEE ROOM,

Saturday, 21st April, 1877.

Mr. SANDFORD FLEMING, Chief Engineer of the Pacific Railway, was called, sworn, and examined as follows:—

Q. Was the terminus of the Pacific Railway located at Kaministiquia by your advice?—It was fixed on consultation with me; I made no opposition to it.

Q. Did you recommend it?—I am not aware of having specially recommended it; I recommended it in a general way, which I will explain: I am not aware of having written any reports recommending it.

Q. Are you clearly of the opinion that it is the best site for the terminus on Thunder Bay?—I could not answer that question directly without some remarks. The object that we had in view from the first was to get the shortest line between the prairie region and the navigation of the St. Lawrence on Lake Superior. There are three points that were spoken of: Nepigon, Prince Arthur's Landing on Thunder Bay, and Fort William. Of the three, Fort William is the nearest available point to the prairie region, and on that ground Fort William has been selected. The navigation really extends two or three miles nearer the prairie region than Fort William, but it is not accessible by land; the banks of the river get higher, and we could not reach it very well by a railway.

Q. Are you of the opinion, considering the requirements of the Pacific Railway, that the point selected is the best?—That is a very broad question. (It is a very pertinent one.) I am not prepared to give a decided opinion at this moment. I think Fort William will answer for the terminus very well for many years to come. I think the day will come when there will be business done at Nepigon.

Q. Speaking of this result from the conference between yourself and others, are we to understand that there was no influence or pressure brought to bear upon you to select that terminus?—No undue pressure.

Q. When was it selected as the point for the terminus?—I think it was in the winter of 1874-5.

Q. In fixing upon that point, did you take into full consideration the cost of dredging at the mouth of the river and making the river navigable for such vessel as navigate Lake Superior?—According to the information we obtained from surveys the river, inside the bar at the mouth, is quite navigable for vessels that navigate the lakes. There is a bar at the mouth which, it is reported, would not be difficult to remove, and which has been partially removed since the terminus was adopted.

Q. You took into consideration the removal of the bar and the keeping of the channel open?—Yes; that was considered.

Q. Is not the river very narrow at the terminus; too narrow to allow lake vessels to turn?—The river is narrow, but it can be widened. There is a branch or inlet immediately opposite the terminus, which could be increased in size, for turning vessels or for any other purpose. If you will allow me, I will show you a plan of the river, made in 1873 before the terminus was fixed upon, and also a plan of the town plot of Fort William. (Plan produced, with the land purchased for railway purposes marked in red.)

Q. What is the width of the river opposite the terminus?—It is in the neighbourhood of four hundred feet, judging by the eye.

Q. What is the depth of water?—It ranges from twelve to twenty feet. It is, according to the soundings on the plan, thirty feet, immediately opposite the town plot of Fort William. It is thirty feet in the middle and sufficiently deep at the edge to allow vessels to come alongside. The river is very deep in some places. I think it is shallower near the mouth than further up.

Q. Have you made any plans for the widening of the river?—We have not. There is one place spoken of for a turning basin.

Q. A year ago did not one of the Beatty line of steamers with three hundred tons of rails run up there?—I did not see it, but I know we have landed a quantity of rails there by lake vessels. I fancy that any vessels that would pass through the locks—even the large locks at Sault Ste. Marie—would turn in this river. I speak of the existing lock, not the new one that is in course of building.

Q. What is the length of that lock?—I do not know.

Q. Did you make any estimate of the cost of removing the bar at the mouth of the river?—I did not.

Q. When Fort William was fixed upon as the terminus, did you expect the ground would cost any considerable sum? You saw what it is said to have cost—over \$51,000—did it strike you as being an extravagant price?—I was very much surprised to see it.

Q. Do you consider Kaministiquia possesses decided advantages over Prince Arthur's Landing for the terminus?—I never favoured Prince Arthur's Landing for the terminus, I was more in favour of Nepigon. I think Kaministiquia is much better than Prince Arthur's Landing, because it is perfectly smooth water, sheltered in every way. Prince Arthur's Landing is on the edge of a large sheet of water, and there must be some little sea there at times.

Q. Do you know if there is anything more than a little sea?—I know very well that the width of Thunder Bay is very much greater than that of Toronto Harbour, and I know that vessels will be disturbed during a heavy wind at the wharfs in Toronto Harbour.

Q. What would be the width of Thunder Bay at Prince Arthur's Landing?—It

appears to measure thirteen nautical miles from Thunder Cape to Prince Arthur's Landing, on the map which I have before me. The width between Thunder Bay and Pie Island measures on the map five miles, and the distance through that opening of five miles to Isle Royale is, as I measure it, on the map twenty-seven or twenty-eight miles.

Q. Making a total to Prince Arthur's Landing of how much?—Twenty-seven or twenty-eight miles from Isle Royale.

Q. Have you any personal knowledge of Prince Arthur's Landing?—I have been at Thunder Bay and at Prince Arthur's Landing. I have not seen it during a storm, but I imagine that the water is acted upon by the wind there the same as in any other part of the world.

Q. Would the winds from the west affect Prince Arthur's Landing?—The wind from the west and north would not disturb the water there, but the winds from the east would have about fifteen miles or a greater distance to pass over.

Q. What is the country lying east; is it elevated or low?—Part of it is high and part of it is somewhat low. That part between Black Bay and Thunder Bay is, I understand, somewhat low. That is a long way off; probably twenty miles to the east and north-east of Prince Arthur's Landing.

Q. In reference to Thunder Cape, would that not be a protection from the east and south?—It would be no protection from the east, but it would be from the south-east.

Q. What is the distance from the Cape to the main land?—It is, as I measure it, thirteen miles, if this map is correct.

Q. Is not that thirteen miles gap partly filled by Pie Island?—It is not filled by Pie Island; Pie Island is out of the way altogether; it is five miles south-west of Thunder Cape.

Q. Yes; but the gap is between Thunder Cape and Grand Point, on the main land?—Grand Point is a long way from Prince Arthur's Landing.

Q. I am speaking of across the bay from Thunder Cape to the main land?—You probably refer to the islands called Welcome Islands; they are about five miles out.

Q. With whom had you those conversations you spoke of in determining the terminus of the railway?—With Mr. Mackenzie.

Q. Not with any other person?—Not with any other person I remember of.

Q. Who selected the terminus point; who located it?—The Government selected it.

Q. But who located that particular point?—The Government selected the terminus of the Pacific Railway on Lake Superior.

Q. Who selected the particular piece of ground?—I did; I recommended that particular piece of land, shown on the plan before the Committee, colored red, as the land required for the Pacific Railway.

Q. Did you do that under instructions from the Government?—No; the Government selected the spot where the railway should terminate, and I recommended that all this land (pointing to the map where it was colored red) should be secured for railway purposes. The Government selected the spot where the land should be secured.

Q. Who staked it out?—I don't know; the land was marked out before; these lots had already been in existence; the plan of survey had been previously made by the Ontario Government.

Q. The town plot was surveyed and laid down on the map; the Government fixed upon the town plot as the terminus, and Mr. Fleming recommended a certain portion of the town that should be taken for the terminus?—Quite so.

Q. Who did the work?—I took the map in my own office and marked out the space now shown on the map as the land required. It was not practically done by myself, but it was done under my eye.

Q. Who was it that was up there as your engineer, and who, under your instructions, completed the location of the terminal ground?—I know that Mr. Hazlewood was sent up there after the terminus was determined on and when the quantity of

land was secured, but whether he staked out the land or not I do not know. I do not really know that it has been staked out to this day by our staff. I presume it was staked out by the people who laid out the town plot.

Q. What time was it selected?—It was selected by the Government on the 23rd of January, 1875, when this plan was fyled. That was the dedication of the land for railway purposes; that is to say, the fyling of this map.

Q. I suppose after the line had been laid down there it was afterwards sent to the office?—I don't understand you. There is no line—no railway line laid down,—it is simply a plan shewing land required for railway purposes. The railway is located and the track laid down on the ground. Several engineers had been at it. Mr. Murdock made, I think, the first survey. That survey was afterwards amended under the direction of Mr. Hazlewood. The first survey made in that part was made, I think, in 1872.

Q. Did you send instructions to Mr. Murdock in the fall of 1874, to select a point on the river somewhere about that town plot for a terminal point?—I may have done so, but I don't remember.

Q. What is the height of the banks at this particular place?—The banks are not very high there; that is, the first point where they become low; they increase in height as you go back. Immediately on the river the banks are six or seven feet above the water; a little way back it is probably nearly twenty feet.

Q. Could land have been obtained further down, which would have suited the purposes of railway, as well as at Fort William?—I do not doubt it at all. Anywhere on the river would do equally well, except up further, where we could not reach it by land, on account of the high banks. We would have preferred Point de Meuron, but we found we could not reach it by railway, the ground was so high. We could have gone lower down, but we wanted to get the nearest available point to Red River. If it had been taken down half a mile, it would have lengthened the distance half a mile. By widening the river, I do not mean it to be inferred it would be necessary to widen it all the way down; but it will be necessary in the future, to widen a portion of it for turning purposes.

Q. Could the reservation have been used for the railway along the bank of the river, had the terminus been selected half a mile lower down?—Yes; but we would have to follow the bend of the river.

Q. Could the land have been obtained half a mile lower down, and at what price?—I do not know. I know parties at Thunder Bay are building a branch to Fort William, and they want to intersect the main line at a point north of the terminus. I have reported against that. The reason they give for desiring to intersect the main line north of the town plot, is the excessive value of land along the river, rendering it expensive to obtain right of way.

Q. Do you know what they mean by "excessive"?—I do not know; the outlay, they say, would be very great.

Q. You are not aware that the McKellar farm could be got for \$80 per acre?—I do not know.

Q. By the route you recommend for the railway to Prince Arthur's Landing, what would the distance be?—It would, I think, be some six miles from the terminus to Prince Arthur's Landing.

Q. Have they not constructed the railway by their own favorite route?—No, they have applied for rails to construct it.

Q. And it is a different route?—Yes.

Q. How far is the town plot from the mouth of the river?—It must be about three miles—somewhere about three miles.

Q. Why did you think it necessary to take up the south-easterly section of the land marked in red on the map?—Because it is easier to get it now than it would be fifty years hence.

Q. Did you select all this land on your own mere motion?—I have recommended the selection of the land shown in red on the map, on my own motion. I was asked by Mr. Mackenzie if it was not too much, and I said that I thought it would be

better to err on the safe side and get plenty, as it would be much easier getting it now than in the future, when it would be probably all occupied by buildings. I had felt the inconvenience more than once of having a cramped terminus for a railway, and I instanced Halifax, where too little land had been taken up in the first place, and the Government had been compelled subsequently to purchase more at an enormous cost. The land at Halifax, I think, originally belonged to the Government, and they very unwisely reserved too little for the terminus there.

Q. At the time you reserved this land at the town plot you thought it could be obtained for a nominal price?—I thought it would cost very little compared with what it would years hence, and what it actually did cost.

Q. You say you selected this land after conference with Mr. Mackenzie; did you ever express an independent opinion as regards this terminus?—I am not very clear on that point; but I think I have expressed myself the same as I have done to-day, to the effect that this was a better point than Prince Arthur's Landing.

Q. Did Mr. Mackenzie show any special desire to have Kaministiquia selected in preference to Prince Arthur's Landing?—Not that I know of.

Q. You say the main reason for selecting it was, it was the shortest available point?—It was the point on the navigation of the lake nearest the prairie region of the west, which we could reach by rail. We have navigation at nearer points, but we cannot reach them.

Q. Did Mr. Mackenzie suggest that it was desirable to have an extended water frontage?—I suggested that myself. I am inclined to think that Mr. Mackenzie objected to taking so much land at first; but he yielded to my views after a time, when I pointed out to him how much easier it would be to obtain the land now than hereafter, and if it was not required in the future it could be easily disposed of.

Q. Do you know whether that land could be disposed of—any surplus of it—at a higher figure?—I think it could be very easily disposed of, but it would be very unwise to give it up for the present or for a long time to come.

SANDFORD FLEMING.

OTTAWA, April 27th.

The Committee met at noon.

Mr. Wm. Murdock, C.E., was called, sworn, and examined as follows:—

Q. Were you the engineer in charge of the surveys made in the selection of the Pacific Railway terminus at Fort William?—I was.

Q. At what time was that?—In 1874.

Q. When did you first become aware of the Government having determined to select that place as the terminus?—In June, 1874.

Q. Where did you become aware of that?—From instructions which I received at Ottawa.

Q. Did you become aware of that from Mr. Fleming, or whom?—Both from Mr. Fleming and Mr. Mackenzie.

Q. In the spring of 1874?—In June, 1874.

Q. At what time did you receive instructions formally to locate the terminal point?—In June, 1874.

Q. Did you locate the station grounds?—No.

Q. What instructions did you receive in reference to it?—My instructions were to begin the location from the head of navigation on the Kaministiquia River.

Q. Look at this map (plan of the town plot produced) and see if the head of navigation has been selected according to the instructions which you received?—No; I told Mr. Mackenzie that the head of navigation on the Kaministiquia was the upper end of the town plot of Fort William, laid out by the Government of Ontario.



Q. And your instructions then were to select the head of navigation?—Yes; to begin from the head of navigation.

Q. Did you recommend any particular course to be pursued with reference to the selection of the lands?—None whatever; I recommended that the line should be brought further down towards the mouth of the river.

Q. What object had you in view in making that suggestion?—My objects were, as set forth in the report made to Mr. Fleming, in September, 1874, for the better facilities it afforded for dockage and later navigation in the fall of the year.

Q. What is the elevation of the bank at Fort William town plot above the level of the river?—The elevation at the point where we began the location was 27 feet above the level of the river.

Q. What was it further down—say, for instance about mid way?—It slopes gradually down to the mouth of the river, and at the mouth it is only about one foot above the level of the water—it is a gradual slope all the way down.

Q. How far is it below the town plot to the mouth of the river?—I should say at least a mile and three quarters to two miles to the mouth of the river—that is from the lower end of the town plot. I cannot say exactly.

Q. How far is it above the Hudson Bay Company's old Fort?—Without measuring it I could not tell; I should say it would be about a mile and a half to the lower end of the town plot. I walked over it often enough, but not with the view of determining the distance.

Q. Could this line have been extended further down without disadvantage to the railway itself? You say you were instructed to locate from the head of navigation westward, but that you recommended for a terminus a point further towards the mouth of the river?—Yes; the further you go down the better the facilities for dockage would be.

Q. Is the point you recommended higher up or lower down than the Hudson Bay Company's Fort?—Higher up.

Q. Is there any property that you could describe as the point you recommended between the Fort and the McKellar property? What about the McKellar farm?—It almost immediately joins the town plot that might have been used.

Q. Did you recommend that land as the terminus, or did you recommend that the terminus should be still lower down than the farm?—No; I did not recommend any particular place.

Q. Was the point that you favoured on the McKellar farm or on the river?—I recommended that it should be taken further down.

Q. Had the line been extended further down could land have been obtained suitable for station grounds?—Certainly.

Where?—On the McKellar farm or on that immediately adjoining; the people who occupy it keep the post-office, the McVicar's.

Q. What could that land have been obtained for at the time the selection was made?—The only information I can give you on that point is that John McKellar came to me about that time and asked me if I knew any one who would be likely to purchase his land, that he would sell it for \$70 per acre.

Q. Was that before or after you were there?—It was about the time I was there in 1874.

Q. Was it known at that time that the Government were likely to select this place for the terminus?—I think they were all aware of the object of my operations there.

Q. Then it was after the Government had made this proposition. Was it known that the Government had selected this particular place?—They all knew from the mere fact of my beginning there, that my instructions were to begin location.

Q. Was this land worth as much prior to its being known that the terminus was going to be located there, as it was after?—A portion of it was cleared land, and judging from the value of ordinary farm lands in Ontario, I should say it was worth \$75 per acre.

Q. That farm is a very old one is it not?—Yes; I think it was cleared thirty or forty years ago. The people came from the south side of Lake Superior to there.

Q. Does that farm extend down the river?—Yes; to the edge of the river.

Q. What is the frontage on the river?—I could not tell exactly how much frontage they have on the river; they may have two thousand or three thousand feet. It was part of the lands claimed by the Hudson Bay Company.

Q. Would the situation of that land be as favorable for the work of approaching the water by the railway as the town plot which is considerably higher up the river?—I think it would be more favorable as far as dockage is concerned.

Q. But it would add so much more to the length of the line?—Yes; it would add so much more to the length of the railway and cost of equipment of the line.

Q. You would have to buy the right of way?—Yes; except you took the reservation along the river or the public highway.

Q. At the time the selection was made, were there any buildings on that property on the town plot?—There was one building of Oliver & Davidson's, I should say it was probably 25 feet by 15 feet square. It was not occupied. There were also one or two buildings opposite the mission, log shanties, and also a little place that was occupied as a tavern by a former cook of mine named McCarrum.

Q. Can you describe the streets on which those properties were?—I could not.

Q. Do you know John McLaren's place?—Yes; I know it.

Q. I see there has been \$1,800 paid for that building; do you know anything of that building?—I do.

Q. What kind of a building was it?—As far as my recollection serves me it was a log building partially clapboarded on the ends. I could not say definitely whether it was clapboarded altogether or not.

Q. How does the price strike you?—I do not think it would be worth more than \$400 or \$500. I was never in the house and I merely speak from my recollection of the place; I passed it often.

Q. I find there was a building purchased from Henry Delorme who had two buildings—one at \$150 and one at \$125?—They could not have been there when the line was first located. There was, I think, only this man McLaren and another Half-breed family. The Lorettes occupy the place that was used as a tavern. I think that was the best building of the lot. There might have been one or two little shanties adjoining McLaren's.

Q. I see by this return also, there was a hotel owned by Warnock & Marks, for which \$1,280 was paid; was that building there when you were there?—No; there were no other buildings there but the ones I have described, and those of two other Half-breed families further down the river.

Q. I see by this return also, that there was \$5,029.36 paid for a hotel built and owned by Davidson, known as the Nebing Hotel?—I never saw it.

Q. What I understand you to say with respect to the location of the line and the land, is this: you were instructed to begin the location at the head of navigation?—Yes.

Q. That you began at the upper end of the town plot?—Yes.

Q. Did you stake it out there?—No; I did not.

Q. That you recommended a site further down the river, below the town plot, for the terminus, on account of the greater facilities for dockage afforded by it?—Yes; and also for longer navigation in the fall of the year.

Q. That you understood—in fact you had it from the owner of the property adjoining this—that he would sell his farm for \$75 an acre?—Yes; from John McKellar.

Q. That was after he knew you had selected that place for the terminus?—I cannot state whether it was after or at the time. It was when I was there, during the time I was engaged on the surveys.

Q. Do you suppose there would be any difficulty in keeping open the course of that river, supposing the terminus was located on its bank? Would the passing of vessels keep it free from ice in the fall?—I should say it would be necessary to keep

a harbour tug running there night and day to keep it open in the fall as long as Prince Arthur's Landing.

Q. Was this land the in town plot, at that time of any greater value than the McKellar farm for the purposes of the railway?—I recommended the lower place for railway purposes from the fact that the land slopes a great deal towards the mouth of the river, and the river freezes at least ten days or a fortnight earlier than in Thunder Bay at some seasons.

Q. Would not dockage be hard to find, when the bank is twenty-seven feet back?—The land at the west end, where the location was commenced, is twenty-seven feet above the water, and the place of suitable height was somewhere about the centre of the town plot. In order to reach the lower bank, it would be necessary either to make a cutting, or fill to reach it.

Q. What is the width of the river there?—I measured it with Mr. Hazlewood, the engineer who was sent up to supersede me. My memory does not serve me to say the exact width, but it is about 310 or 315 feet—I am not sure which. That is where we measured opposite the little dock that Oliver had at that point.

Q. Does it attain a greater width opposite the bend of the river?—Yes.

Q. What sized steamboat could turn there?—The *Chicora* could be turned by snubbing with the stern line, and turning with the stream; but she could not turn with her machinery. My reason for choosing this point was, it was utterly impossible to take any steamer more than one hundred feet along beyond this point. I had nothing at all to say with regard to the fixing of the station grounds; it was taken out of my hands.

Q. Did you stake out the plot as it now stands, or did you simply put in the terminal point?—I simply put in the terminal point at the western boundary.

Q. Did you put in a stake at the lower end?—No;—I simply carried out my instructions as regards the navigation. I did not mark out the line, as Mr. Hazlewood returned in the spring to do it. I was with him a portion of a day in running the line from the western terminal point down some distance.

Q. Were the surveys first commenced to be made from the Landing or from Kaministiquia?—They were first commenced from Prince Arthur's Landing. I began my surveys there first from Thunder Bay.

Q. What time was that?—In November, 1872.

Q. You had no instructions from the late Government or the Engineer-in-Chief to make surveys at Kaministiquia?—I was not instructed to locate, but to make preliminary surveys in 1872, and report on Prince Arthur's Landing.

WILLIAM MURDOCH.

## REPORT.

THE SENATE,  
COMMITTEE ROOM, 26th April, 1876.

The Select Committee of the Senate appointed to enquire into and report :—

1st. As to the difference in length between the line of the Canadian Pacific Railway from Keewatin westward, and a more southern line by Winnipeg, and south of Lake Manitoba to the nearest point common to both lines.

2nd. As to the cost of construction of each line ; also the fitness of land for settlement along each line respectively ; and also the greater chance of an immediate remunerative line, " with power to send for persons, papers and records," and who were also authorized " to examine into all questions relating to the purchase of property at Fort William for a terminus of the Canadian Pacific Railway, and to send for persons, papers and records, to examine witnesses under oath, and to report thereon to the Senate with all convenient speed, this Session," beg leave to submit the following as their

### THIRD REPORT.

Your Committee have devoted much time and patient attention to the investigation of the subject submitted to them by the Order of Reference ; they have examined numerous witnesses, Chief Engineers and Land Surveyors ; amongst the former was the Government Engineer-in-Chief, Mr. Sandford Fleming ; and your Committee beg to report herewith the evidence of said witnesses, and

1st. With reference to the line between Keewatin and Selkirk, your Committee premise that the work being under contract, and some portions of it far advanced towards completion, and \$260,000 expended thereon, no change is recommended.

2nd. As to the difference in length between the located line from Keewatin to line as well as to the more Southern route, which, it is supposed, might prove more eligible as being shorter, easier of construction, and passing through a country more fertile and attractive. Your Committee report that the exact length of the located line is known ; it is 619 miles ; but the length of the suggested line can only be estimated by measuring air lines over the map ; and that if an estimate made on that basis is adopted (without allowing for curvature), it would appear that the length of the two lines is nearly equal. One statement submitted to your Committee gives the length of the located line as 505 miles from Selkirk to Caerlaverock, at the north elbow of the Saskatchewan, and of the suggested line as 503 miles ; another statement makes the difference of length in favor of the Southern route, 11 miles.

3rd. As to the cost of construction of the respective lines, it is impossible to speak with precision, inasmuch as the projected southern line has not been located. No instrumental surveys south of the Little Saskatchewan cart trail have been undertaken, in consequence of the unfavourable indication presented in that locality, the line now located was therefore adopted. Much evidence, however, has been taken by your Committee, which leads them to believe it possible that a favourable route may be found passing through a desirable country, and unobstructed by many of the difficulties which induced the Engineer-in-Chief to relinquish the idea of finding an available route south of Lake Manitoba.

4th. As to the comparative fitness of the land in the vicinity of the respective lines for settlement your Committee can only venture to speak in very general terms. That there is a large area of settled lands and lands available for settlement, of unsurpassed fertility in the Province of Manitoba, is well known, and the best of these would be intersected by the suggested line ; but beyond and westward of the settled and surveyed districts much variety of soil exists.

On the located line some fertile land is reached beyond Selkirk, and considerable tracts are found about the north-west shores of Lake Manitoba, Dauphin Lake, and the valley of Swan River; much useful timber is also growing between Selkirk and Northcote, while further west the line traverses a region of great extent and adapted for settlement.

5th. Your Committee observe that the Engineer-in-Chief retains his opinion that the located line is, on the whole, the best that can be chosen; without challenging the accuracy of that opinion, but in view of the fact that a southern route would intersect a fertile district inhabited by prosperous settlers who would contribute much to the successful working of the line, and whose interest, so far as they are compatible with those of the public, ought not to be lost sight of; in view also of the fact that the said route might possibly prove less costly than the located line.

Your Committee advise that an instrumental survey of the southern route crossing the Little Saskatchewan from 10 to 15 miles south of the "Cart Trail" thence westerly and north-westerly to the Assiniboine, at a point above the junction of the Qu'Appelle River, thence in a north-westerly direction through the Touchwood Hills to the elbow of the North Saskatchewan at Caerlaverock on the located line be made during the ensuing summer; and your Committee feel they are justified in making this suggestion in conformity with the wishes of the people of Manitoba, inasmuch as the Engineer-in-Chief has stated that such a survey might be accomplished by two parties of Engineers in one season at a moderate cost.

All which is respectfully submitted.

M. A. GIRARD,

*Chairman.*

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MINUTES OF EVIDENCE.

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THURSDAY, 22nd March, 1877.

The Committee met at noon; HON. MR. GIRARD in the Chair.

Mr. S. FLEMING, Chief Engineer Pacific Railway, was called and examined as follows:—

*By Hon. Mr. Aikens:—*

Q. You are the Chief Engineer of the Pacific Railway?—Yes; I have been so for six years.

Q. I think I understood from you the other day that Cross Lake might be considered a common point whether you wanted to go to Selkirk or Winnipeg?—At one time it would have been considered a common point, but a good deal of money has since then been expended on the line towards Selkirk. We have spent between \$200,000 and \$300,000 on that route. If you go back two or three years, Cross Lake would have been considered a common point.

Q. Would there be any greater difficulty in constructing a line to Winnipeg from Cross Lake than to Selkirk?—There would be no great difficulty either way.

Q. Why was Selkirk selected?—It is in a very direct line to Northcote, and it connects with the navigation of Lake Winnipeg.

Q. Did the navigation of Lake Winnipeg influence you in the choice of that route?—It did.

Q. What trade did you expect from that district?—There were other reasons as well as the trade. The neighbourhood of Selkirk has never been known to have been flooded, whilst the country where Winnipeg stands has been flooded several times to the depth of three or four feet all over the surface.

Q. What trade did you expect for the railway in forming connection with Lake Winnipeg?—Such trade as is usually brought by water on any of our lakes.

Q. Is the country on the north side of Lake Winnipeg rocky and rugged?—I believe it is not a very desirable country to the east or north of Lake Winnipeg.

Q. What is the west like?—The west of the Lake is a better country.

Q. Is there any land inviting for settlement on the west side until you approach near to Red River?—The best land of the country is not there; Winnipeg, however, is a large sheet of water, not much less in area than Lake Ontario, and possibly the trade of the Saskatchewan may go there some day or other.

Q. Then the impression you were under in locating the line there, was that we might get that trade some day?—I thought it decidedly important to take advantage of that navigable water, extending as it does some hundreds of miles. There is no great trade there at present—probably none—but we do not know what trade may spring up there in the future.

Q. Are you aware that no vessel can pass into the Saskatchewan from Lake Winnipeg at present?—I am quite aware that at one time no vessel could pass from Lake Ontario into the St Lawrence as far as Montreal, for the same reason—want of locks and improvements.

Q. Did you think that by crossing the Red River further up—that is, nearer Winnipeg—there would be difficulties in the navigation?—The rapids in the river above Selkirk render the river unnavigable during the summer season. This could be got over, I presume, by the construction of locks, or the deepening of the channel the river.

Have you ever been over the line, as located, from Selkirk to Shoal Lake?—No, I have not.

Q. Then the information you have respecting the character of the soil from Selkirk to Shoal Lake is merely from others?—The whole of this information you are trying to get from me is embraced in a report that I have been preparing for six months past; and the information is much more fully given in it than I could possibly give you now.

*By the Hon. Mr. Macpherson :—*

Q. Will that report be in our hands this session?—Yes. It is now in the printers' hands, and will be out very shortly. It cannot be expected that I can give you facts and figures as precisely, or as accurately, as I can deliberately write them at my desk. I would prefer to read the report to the Committee from the manuscript, if the Government would permit. The answers I give you now cannot be so satisfactory either to you or to myself as if I read them from my report.

Q. What percentage of land is available for settlement from Red River to Shoal Lake?—In the document I am getting out the fullest possible information is given. It will cover two or three hundred pages, and it includes reports from Professor McConn, Mr. Dawson, and others, with regard to the agricultural capabilities of the country, the economic minerals, and everything else. I have not been over the whole ground myself, although I have been through the country a good deal.

Q. Then from Shoal Lake westward you have not been over the route?—I have crossed the line in several places before it was located, but not since.

Q. Who located the line?—It has been located by different parties. From Selkirk west to the crossing of Lake Manitoba was located by Mr. H. McLeod.

Q. How far west did he go?—He went through Yellow Head Pass at various times.

Q. Who were the engineers under him?—Messrs. Lucas and Ruttan; neither Mr. Lucas nor Mr. Ruttan have been on the portion between Lake Manitoba and Selkirk. From the Narrows west, Mr. Cunningham, who is now in Prince Edward Island, and Mr. Lucas had been over that section, and the reports of those gentlemen will be embodied in mine.

*By the Hon. Mr. Haythorne :—*

Q. Could you inform the Committee at what period this survey which forms the basis of this enquiry, was commenced?—We commenced exploratory surveys in 1871, the instrumental surveys did not commence for probably a couple or three years after that.

Q. Were the first explorations made with a view to obtain the best line?—Yes.

Q. Could you state what particular time you came to the conclusion that the line selected from Selkirk *via* Northcote was the best?—I cannot charge my memory, but the date is given in the report I referred to—the very month and year.

*By the Hon. Mr. Macpherson :—*

Q. You say one of the reasons for selecting the present route was to accommodate future trade by Lake Winnipeg. Has the country on the shores of Lake Winnipeg been thoroughly explored?—I think not; the impression in my mind is that the northern shore, at all events, and the eastern shores are not adapted for agricultural purposes; it may be valuable for mineral resources, so far as I know, but there is nothing known beyond the coast line.

Q. I understood you to say that there are difficulties in the way of trade by the Saskatchewan falling into Lake Winnipeg?—Yes.

Q. Serious difficulties?—Yes.

Q. Do you think, supposing the Canada Pacific Railway to be built on the line located, that any considerable amount of traffic under the most favourable circumstances, will ever find its way along the Saskatchewan and into Lake Winnipeg?—I am not prepared to give an opinion on that point.

Q. Have you formed an opinion on that point?—No; the difficulties in the way are not very serious, nothing like difficulties that have been overcome in other parts of Canada.

Q. How deep is the water of the Saskatchewan?—The Saskatchewan with few

exceptions, is navigable for light draught steamers for many hundreds of miles above the rapids near its mouth, for vessels of three or four feet draught.

Q. In the lowest water?—Yes; in low water from three to four feet. There would be difficulties in the lowest water, in the present condition of the river for instance: Tobbin's rapids, Coal rapids, and perhaps some other points where there are boulders in the way, and which would require to be taken out.

*By the Hon. Mr. Aikens :—*

Q. Why select this northerly route through the narrows, instead of going south of Lake Manitoba?—Because it is a good deal shorter.

Q. What is the distance between Selkirk and Caerlaverock?—It is 271 miles from Selkirk to Livingston; from Livingston to Saskatchewan, 196 miles; and to Caerlaverock, about 40 more; in all 507 miles.

Q. Could not a shorter line be had south of Lake Manitoba and the Riding Mountains?—The line south of Lake Manitoba would be a very costly line, from what I have seen of it myself. I am quite satisfied that the located line is the shortest between those two points, and by far the cheapest and the best. It may not be shorter than an air line drawn between the two points; but you could not possibly construct an air line through that country.

Q. Have you ever been over the country from Selkirk to the Little Saskatchewan?—I have.

Q. What is the quality of the soil?—It is most excellent.

Q. Are you prepared to say what the distance is?—I do not remember.

*By the Hon. Mr. Haythorne :—*

Q. Are the general features of the country level?—Yes, slightly rolling. When you get to Little Saskatchewan it is not so level.

*By the Hon. Mr. Aikens :—*

Q. Have you ever examined for the purpose of a railway, the crossings of the Little Saskatchewan?—I have. I have had photographs of it taken.

Q. Which way did you examine, north or south of the cart trail?—The Little Saskatchewan has a deep wide valley, extending up and down as far as the eye can reach. I did not take time, nor had I time, to examine it for a great distance on either side of the crossing on the cart trail. I could only judge of what I saw within the range of my vision, which covered a great many miles. I had parties exploring in various directions to the right and to the left, not when I was there myself, but at other times.

Q. Who were the parties that explored right and left?—Messrs. Moberley, Horetsky, Nichol and Ermatinger.

Q. You are not prepared to say how far those gentlemen extended their observations north or south?—They extended them through the country. The information acquired was of a general nature; the whole country was new to us; we did not know any one of those particular points you are now referring to at that time.

Q. Do the difficulties to which you refer grow out of the streams coming from the Riding Mountains?—The Little Saskatchewan is the principal but not the only point where the difficulties are great. Every stream flowing from the north seems to run in very deep, wide valleys.

Q. Do they take their origin in the Riding Mountains?—Yes; the elevation of these mountains is 1,600 feet above the sea.

Q. What is the elevation of Lake Winnipeg, above the sea?—Lake Manitoba is 751 feet; Lake Winnipeg 710, and Lake Winnipegosis 770. The Riding Mountains are 1,660 feet; all above the same level; so that the Riding Mountains would be about 900 feet high. There is no peak running up; it has merely a plateau or flat top.

Q. Do they decline from the highest point towards the south, and join with the plains below?—The elevation to the west is maintained somewhat. To the east they fall off somewhat abruptly, and to the south they run gradually down to the plain.

*By the Hon. Mr. Simpson :—*

Q. Are they timbered?—Some portions of them are. There is more or less timber everywhere, but it is not of much value, except what you meet in groves.



*By the Hon. Mr. Aikins:—*

Q. The further south you keep from these mountains, do you not find less difficulty in crossing the streams descending from them?—Yes; but you would have to go a long way out of the direct course. You would have to go south of the Assiniboine to get a more level country. I do not think there is much probability of getting a satisfactory line the north of the Assiniboine.

*By the Hon. Mr. Sutherland:—*

Q. Are you aware that there is a valley running between the Duck Mountain and Riding Mountain?—There is a slight valley.

Q. You have no particular knowledge of it?—No; I have no special knowledge of it.

Q. Have you any special knowledge of the country along the base of Riding Mountain, south side?—That is the country we have been talking about. I have not been there except on the cart trail.

*By the Hon. Mr. Aikins:—*

Q. I think you stated the other day that by the railway crossing at the Narrows vessels going northward from the south of Lake Manitoba might connect there with the trade coming southward from Lake Winnipegosis?—Whenever we touch navigable water, such waters will form traffic-feeders to the railway.

Q. Will it require a drawbridge at the Narrows to allow vessels from Lake Winnipegosis to pass down to Lake Manitoba?—I trust a drawbridge will not be needed there. There is certainly no traffic to require a drawbridge there at the present time.

Q. If there was navigation between the two lakes it would be intercepted by the railway bridge, would it not?—The railway crossing at that point would undoubtedly interfere with the navigation between the two lakes, unless there is a drawbridge, or a bridge high enough to allow vessels to pass under it.

Q. Have you ever heard that in the neighbourhood of the Narrows, on the east side, the contractors for the Pacific Telegraph Line were unable to obtain sufficient solid ground to keep their poles erect, and many of them had fallen down?—I never did. It is perfectly new to me. I hear a good deal from different sources that I do not pay much attention to.

Q. In passing over the muskegs on the line have the engineers ever examined them in order to ascertain what the bottom really is?—Yes.

Q. What was the result?—They reported to me that the bottom is hard.

*By the Hon. Mr. Macpherson:—*

Q. At what depth from the surface?—At various depths. At no place is the depth considered great. I do not think the difficulties in laying a railway track through them would be any greater than in the construction of the Northern Railway from Collingwood to Barrie. That was looked upon as a formidable work to go through there with a railway at one time. The very last time I went over that line I was surprised to see the land that I considered, when the railway was being constructed, as being entirely worthless, now bearing crops of grain.

Q. Has the surrounding country been cleared?—A fire passed through it, destroyed the timber, and let the wind and sun in. The owners of the land dug ditches, which carried off the water, and converted the soil into arable fields. I mention this to show that a country that may be considered of little value now may be of value in the future. My remarks will apply to the portion of the Pacific Railway in question also. There is a little timber over it, certainly over fifty per cent. of the line is timbered. North of Shoal Lake, it is heavily timbered, and I am not sure but the whole of it is timbered more or less from there to Livingstone.

Q. Do I understand you to say that these muskegs or swamps are timbered?—Some of them are, and some of them are not.

Q. How are they from Shoal Lake to the Narrows of Lake Manitoba?—Some of them are timbered. I would wish it to be understood that the timber in that section is nothing like the timber we have in this part of Canada. It consists for the most part of willow, poplar, spruce, and that sort of wood.

Q. Has the fire ever run over that section of country?—I am not aware that it has of late years, but I have no doubt that it will if precaution is not taken to prevent it.

Q. What effect would it have on the roadway where the land is saturated with water, should the frost penetrate five or six feet into the ground, if it was not drained to take the water off?—Unless the road-bed is of sufficient height to prevent the frost from getting under it would certainly injure it; but if we dig a ditch three feet deep, and raise the roadway three feet, it will be sufficiently high to avoid that danger. It ought to be that high at any rate. The ground is forty feet above the level of Lake Manitoba, so that there cannot be any difficulty in carrying off the water.

*By the Hon. Mr. Haythorne :—*

Q. Then there would be no difficulty in draining it?—No great difficulty. Some of the drains would have to be conducted a considerable distance.

*By the Hon. Mr. Aikens :—*

Q. Would you get sufficient soil out of the ditches to make the road-bed?—Yes, quite enough.

Q. Have you ever heard anything about the ice-jams at the Narrows?—Yes, but I do not suppose the ice operates differently there from what it does on any other great lakes of the country. It will push a little, and it will require some stonework to protect the roadway.

Q. Is stone accessible in that section?—There is stone in that neighbourhood. I know limestone is reported as existing on the shores of the lake, and it could be easily brought by water to that spot. Nearly all the information I am giving you is second-hand. You asked me to furnish you with the comparative distances of the located line and the route by Winnipeg, and the estimated cost which I will now give you. The located line from Northcote to Selkirk is estimated to be twenty-four miles shorter than a line round the southerly end of Lake Manitoba running thence to Selkirk.

The located line from Northcote to Selkirk is estimated to be 32 miles shorter than a line from Northcote by the south end of Lake Manitoba to Winnipeg and Selkirk.

The cost of the first, allowing for track, rolling-stock, &c., would probably exceed the cost of the located line by \$600,000; but as the located line involves an extension of the Pembina Branch, twenty miles, that section may, in estimating the first cost, enter into the account; that would reduce the difference to about \$100,000 in favour of the located line.

To bring the main line round by Winnipeg from Selkirk, and around the south end of Lake Manitoba, the extra thirty-two miles may be estimated at \$800,000; or if the twenty miles of the Pembina Branch be deducted, \$300,000.

The money spent east of Selkirk, on located line, to end of December.....	\$260,000
West of Selkirk, on located line, up to same period, say	60,000
	<u>\$320,000</u>

I had some difficulty in estimating the cost, and I adopted a rule of proportion. Including grading, rails, rolling-stock, etc., I estimate it at \$25,000 per mile. The difference between the cost of the two routes is \$100,000 in favour of the located line.

*By the Hon. Mr. Aikens :—*

Q. Do you suppose the cost of construction would be so great, if you had not to carry the road through such soft ground as that near the Narrows?—I am not prepared to say that there would be any difference. I would not venture to say that it would cost any more or less. I would take them both at the same price.

*By the Hon. Mr. Haythorne:—*

Q. Would you have to expropriate any occupied land on the southern route?—It is probable that we would, and if so, it would, of course, increase the cost of the road, although they might be induced to give the right-of-way for nothing.

*By the Hon. Mr. Girard:—*

Q. Have not many of the surveys been made in the winter season?—Yes, (we have been obliged to make some of them in the winter.

Q. Then the difficulties of the route could not have been seen?—We have found a great deal of difficulty in making the surveys in winter. It has been very hard on the poor fellows who have had to make them.

Q. Was the \$60,000 you speak of as being expended west of Selkirk, expended on the railway?—No; on the telegraph line.

Q. Is there any settlement west of Selkirk?—There may be a little at Selkirk, but none west of that. There is hardly a settler between Lake Winnipeg and Cariboo on the located line, or anywhere in its vicinity.

*By the Hon. Mr. Sutherland:—*

Q. Are you aware that there are settlers on the Saskatchewan?—I am aware that there are a few settlers in that section, but you can hardly call it a settlement. There are one or two at the Saskatchewan and one or two at other points, but they are so very few in comparison to the extent of country, that they cannot be called settlements. With regard to the character of the land and some other questions you have been asking me, I have a report of my own to refer to. It is in reply to a letter sent to the Government by the Lieutenant-Governor of Manitoba, pointing out that the line would be very much better if located south of Lake Manitoba. I think it bears on the question, and it may be well I should read it. It is as follows:—

CANADIAN PACIFIC RAILWAY,  
OFFICE OF THE ENGINEER-IN-CHIEF,  
OTTAWA, 26th May, 1875,

DEAR SIR:—I send herewith replies to some points in the letter of the Lieut. Governor of Manitoba, of date 8th May, 1875; extracts from which you sent me.

I regret to find that the Lieutenant-Governor has been seriously misinformed, both with respect to the quality of the land, and the character of the country for railway construction. I am decidedly of opinion that there could not be a more fortunate selection of route than between Selkirk and Livingstone. I determined in the first place to make a trial survey by the Narrows of Lake Manitoba and Swan River, in order to avoid serious engineering and other objections to the route spoken of by the Lieutenant-Governor, but I little expected to find that either the country or the line would prove so favourable. It would, in my judgment, be a great mistake to change the location now adopted.

Yours very truly,

SANDFORD FLEMING,  
*Engineer-in-Chief.*

The Hon. A. MACKENZIE.

#### MEMORANDUM.

*Extracts from Lieut.-Governor Morris' letter, dated 8th May, 1875:—*      *Replies by the Engineer-in-Chief:—*

1st. I have made a great deal of enquiry, and am satisfied that you can obtain a line running from the crossing below the Stone Fort to Portage la Prais-

The Chief Engineer has himself passed over a great part of the country referred to. He has no hesitation in saying that it would be very much more difficult to

rie, thence to Whitemud and thence to the elbow of the North Saskatchewan—the point you must make for after reaching Fort Pelly—more directly and with less difficulties than the line from the crossing of the Narrows, and thence to Fort Pelly. The advantages, too, of the proposed line are very great.

2nd. The line *via* the Narrows and Fort Pelly, runs through very inferior country, and good land is not met till you reach the Nut Hills beyond Fort Pelly.

3rd. The country around Fort Pelly is not adapted for agriculture. I had a visit yesterday from Mr. Watt, Presbyterian Minister, who spent two years there, and removed, with the consent of the church, to the mountains, because he could raise no crops owing to constant frost. The line I suggest, while traversing the settled portion of Manitoba, would run through a wooded and prairie country, well adapted for settlement.

4th. Another advantage is, that by running from the crossing up the west side of the Red River, you could use that section both for the main line and the Pembina Branch.

5th. If a line can be had as short, and through a good country, it should have the preference over one through an inferior tract.

6th. There is no great benefit to arise from the line to Fort Pelly. It is out of the way, and will be so for years, unless the railway is built to it.

construct a railway in the direction recommended. There would be a large number of deep and wide valleys to be crossed, the cost of bridging which would be enormous. With regard to the located line, the bridging is very trifling indeed; in fact it would scarcely be possible to find a line in any country more favourable, as far as gradients and abridgment are concerned.

The land in the section of country between Red River crossing and Swan River barracks, near Livingstone (not Fort Pelly) is good. Before the survey was made the country was described as all swamp and muskey; this is found to be a mistake. There are some portions of it which require drainage. This will however, be furnished by the side drains of the railway. Much of the country is reported by our engineers to be very rich and valuable.

The line does not pass within ten miles of Fort Pelly, but passes to the north of it, and along the side of the Swan River Valley, where there is as fine land as any in the Province of Manitoba. There is also very fine merchantable timber on and near the line, in the neighbourhood of the Duck Mountains.

This would be sacrificing the main line and unnecessarily increasing its length, in order to serve local interests, and should not for a moment be entertained.

This view is correct. According to the most reliable information obtained, the located line is the shortest that can be had, and it passes through a country in many respects most valuable.

Winnipeg was at one time out of the way. The railway built between Selkirk and Livingstone would speedily bring to it a much larger population than there is now in any part of the country north of the 49th parallel.

*By the Hon Mr. Aikins:—*

Q. Are we to understand that, in the examination of the country south of the located line, that an instrumental survey was made?—Instrumental surveys have been made, but not the whole way referred to by Lieut.-Governor Morris. He refers to a line running through Vert Hills and White Head River, and then from there to the crossing of the South Saskatchewan.

Q. He referred to the Fort Pelly route?—Yes, deprecatingly.

*By the Hon. Mr. Macpherson:—*

Q. The only line that has been surveyed instrumentally is the located line?—I cannot say that. We have made many surveys that are not shown on the map; but the line that has been most accurately surveyed is the located line. We have not run a continuous line through that country, as we considered it would be a waste of money.

Q. Are you aware that a Hudson Bay Co.'s boat came from the Saskatchewan into Lake Winnipegosis, and from there into Lake Manitoba?—I am not aware of it. If it is so, they must have had a very heavy portage.

*Hon. Mr. Simpson:—*

Q. What kind of a boat was it—a bark canoe?

*Hon. Mr. Sutherland:—*

A. No, a five tons boat.

*Mr. Fleming:—*

A. I think you must have been misinformed, as it would be impossible for a vessel to float all the way. They would have to take it over a ridge forty feet high, if my recollection is correct. It must have been hauled over by the crew.

The Committee adjourned at one p.m.

FRIDAY, March 23rd, 1877.

The Committee met at noon.

Mr. THOMAS SPENCE, Clerk of the Legislative Assembly, Province of Manitoba, was called and examined as follows:

*By the Hon. Mr. Aikens:—*

Q. Have you any knowledge of the country about the Narrows of Lake Manitoba along the located line of the Pacific Railway?—Yes; my knowledge is principally acquired from passing from Lake Manitoba into Lake Winnipeg through the Narrows to go into Lake Winnipegosis. That is the route to go to the Saskatchewan, it is the only way of going to that country, by taking advantage of navigation.

*By the Hon. Mr. Macpherson:—*

Q. What sized boats are used?—Boats drawing from two and one-half to three feet of water.

*By the Hon. Mr. Aikens:—*

Q. Were you a resident of the Fairford Mission, a few miles north of the Pacific Railway line for some time?—Yes.

Q. Did you examine the country either north or south of that place?—Yes; I was back some five or six miles on either side of the Mission.

Q. What is the character of the country in the immediate neighbourhood?—It is principally poor wet land covered with pine and tamarack, a sort of muskeg, a very bad country to go through on foot.

Q. Have you ever examined the country more than five or six miles on either side of the Mission?—No; it was almost impossible to go that far, it was so wet and swampy.

Q. Do you know anything personally about the country east of the Narrows?—No; my knowledge is derived from the Indians, who say it so swampy that it is almost impossible to go through it; I have heard from Indians and Half-breeds who were with me in the boat, that they could hardly go through there; I am not speaking of the railway line, but of the country in the vicinity of Fairford Mission, further east.

*By the Hon. Mr. Sutherland:—*

Q. Do you consider it any better where the road is located?—I have not heard, I have always understood that the country was pretty much the same all through there.

*By the Hon. Mr. Macpherson:—*

Q. Do you know whether the country near Lake Manitoba is better than the country further north?—I have sailed along the coast, the land and the timber seemed better.

*By the Hon. Mr. Haythorne:—*

Q. You say you made the voyage in July; was that the lowest water?—No; I should say not. There is a great body of water coming down from other lakes all the time. I had to pass through the Narrows to get up there.

*By the Hon. Mr. Aikens:—*

Q. So far as you know on either side of the Narrows, what is the character of the soil for settlement?—I cannot speak of the soil; I merely passed by on the water. It is a very narrow pass—very rocky in some places near the Narrows—and almost perpendicular to the water north of the Narrows.

*By the Hon. Mr. Sutherland:—*

Q. Do you know if there is a great deal of ice there in the spring?—I cannot say from my own knowledge. I have heard others say it is a very bad place for ice in the spring. There is sometimes a strong current passing through the Narrows.

*By the Hon. Mr. Scott:—*

Q. You do not cross the railway line, as located, at all to go from Lake Winnipegosis into Lake Winnipeg?—No.

Q. What is the country like north of the railway line, and west of the Narrows?—It is all low and swampy.

*By the Hon. Mr. Aikens:—*

Q. You made salt somewhere in that section of country?—Yes; I made salt up the Water Hen River for the Hudson Bay Company, and at Lake Winnipegosis. The salt springs are on Swan River.

*By the Hon. Mr. Simpson:—*

Q. Did you make salt from the springs?—Yes.

Q. How; by evaporation, or boiling?—By boiling, in a primitive way.

Q. Do you know anything of the country east of Northcote, except by hearsay?

No.

Q. Have you traversed Lake Manitoba?—Yes; I have been on both sides—south and west of the lake.

Q. What is the quality of the soil to the south of the lake?—Very good. I have not seen any better.

Q. What is the quality of the land on the west side?—To the west of Lake Manitoba, and south-east of it, below Oak Point, the land is all timbered very heavily.

*By the Hon. Mr. Wilmot:—*

Q. What kind of timber?—A mixture of everything; almost useless except for firewood.

*By the Hon. Mr. Aikens:—*

Q. From your acquaintance with that country, what are we to infer as to the nature of the soil from that quality of timber?—I should say that the soil might be fair enough close to the lake. Where hardwood is growing it cannot be swampy. The timber is usually oak.

Q. From your acquaintance with the country, would you consider it fit for immediate settlement?—I should say not. There are no settlers north of Oak Point. People are not going into a heavily timbered country like that, when they can get prairie land.

*By the Hon. Mr. Macpherson:—*

Q. The country on the west shore of Lake Manitoba is a good country, is it not?—Yes; a very good country; a very pretty country towards the Riding Mountains.

*By the Hon. Mr. Vidal:—*

Q. Have you ever been through the country lying north-east of the Riding Mountains?—No; I went over the Fort Pelly trail.

Q. What is the character of country lying north and east of Lake Manitoba?—

It is generally supposed that the country must be very bad when the Indians cannot go through it in summer. That is the country north of the line. The route I had to take to Fairford Mission could not possibly have been worse.

Q. What was your impression of the land to the south end of Lake Manitoba? That country is the best in the Province; it is beautiful-land.

*By the Hon. Mr. Aikens :—*

Q. You spoke of the soil at Fairford Mission; what is the quality of it?—It is very stony. There is a small farm there which has been cleared by the Mission, but very stony. It has a limestone bottom that comes almost to the surface.

Q. Did you ever hear them say why they did not go further back and get better land?—No; I suppose it was because it was all small pine and tamarack, and they could not get better location there. I suppose they established the Mission in the most convenient place. Starting from Winnipeg, *via* Portage La Prairie, south of Lake Manitoba, and west towards the base of the Riding Mountains, it is a very nice country; flat and slightly rolling in some places.

*By the Hon. Mr. Aikens :—*

Q. Do the mountains disappear on the cart trail there?—Yes; the north side of the Riding Mountains is very steep, but on the south side slopes gradually to a level. It is settled some distance beyond the Little Saskatchewan now—about ten miles.

Q. Have you been as far west as Fort Ellice?—No. Following the southerly cart trail, I have not travelled further west than Little Souris River. The country is very good, with the exception of a few miles here and there of sandy places, especially between the Assiniboine and the Sand Hills. North of the Assiniboine the land is all good, but south, between that and the Souris River, the land is light and inclined to be sandy.

Q. Are there any settlers on the Assiniboine where the cart trail passes?—No.

Q. Are there any on the Souris River?—No.

Q. Have you ever been at the foot of Lake Winnipegosis?—Yes; quite close to it. We have to pass up Water Hen River, and go up about sixty miles; then the river doubles upon itself and runs so close that you can stand up in the canoe and can see over the bend of the river, the land is so flat.

Q. Have you ever been at Mossy Portage?—No. But I have had men with me who have been there dozens of times, and they pushed the boats through from Mossy Portage in the spring.

Q. What kind of boats?—Boats that would carry about five tons—Hudson Bay Company's boats. There is only one kind of boats used there, good sea-going boats.

Q. What is the country at the foot of Lake Winnipegosis like?—I do not know; I have never travelled it.

*By the Hon. Mr. Aikens :—*

Q. As regards the Little Saskatchewan, is there any difficulty in crossing it on the cart trails, owing to a deep ravine at that place?—No; not very deep until you get higher up. The streams west of the Saskatchewan on the cart trail, and descending from the Riding Mountains, are small, you could almost jump across them at the crossings. The banks of the Assiniboine are very high where the cart trail passes. You have to let carts down with ropes at the crossings, the banks being almost perpendicular.

*By the Hon. Mr. Seott :—*

Q. What is the height?—At the crossing place I should say it is almost seventy or eighty feet.

*By the Hon. Mr. Vidal :—*

Q. The streams running from the Riding Mountains to the Assiniboine run through deep ravines where the trail crosses. Do these deep ravines disappear as you travel south to the plains?—They gradually verge into the plain. So far as I recollect I was not particularly struck with the being deep. I did not leave the trail.

*By the Hon. Mr. Scott :—*

—Q. Is that trail known as the Saskatchewan road out by Bird's Tail Creek, due east from Fort Ellice?—Yes.

Q. What line do you follow to go out from Portage la Prairie; is it the third base line?—When I went out there there were no townships surveyed.

*By the Hon. Mr. Sutherland :—*

Q. You say you saw men who went through Mossy Portage with a boat?—Yes. I saw the men, and they were telling me how easy they got through. From the Saskatchewan there is navigation almost through from Lake Manitoba into the Assiniboine River.

*By the Hon. Mr. Macpherson :—*

Q. The Assiniboine falls into the Red River and the Red River into Lake Winnipeg?—Yes.

D. LUCAS, Civil Engineer, was called and examined as follows :—

*By the Hon. Mr. Aikins :—*

Q. You located a portion of the Pacific Railway line; from where?—From the south end of Lake Winnipegosis to Livingstone.

Q. At what season of the year did you locate that?—In winter.

Q. Have you ever been over it in summer?—Yes; I was over it on the exploratory survey during the previous summer.

Q. What is the character of the soil through which that line passes?—I know nothing as to the soil. It is woody and probably sandy soil.

Q. You could judge pretty much from the timber as to the character of the soil?—The timber is spruce, tamarac, poplar, and a good deal of swamp elm. There is very large spruce timber around the Duck Mountain.

Q. From your knowledge of that country, how would you judge of that soil, as compared with that further south and west of Lake Manitoba?—I have been south of Lake Manitoba. I have travelled on the existing trails to the North-West.

*By the Hon. Mr. Scott :—*

Q. Was that on the exploratory survey?—Yes.

*By the Hon. Mr. Sutherland :—*

Q. Which way did you go to Livingstone?—I went along the valley of the Assiniboine to Fort Pelly.

Q. Have you ever been over the line of road where it is located from Livingstone west?—The Assiniboine is not crossed until you get 25 miles west of Livingstone.

Q. Is that the heaviest stream you have to cross, the Assiniboine, at the west and east branch?—The crossing would be a mere nothing at these points.

Q. How wide are the streams?—The water is about 100 feet or under—100 feet in each case. In neither case would a tressel structure for bridges be more than 30 or 40 feet high. I have been from Livingston to Edmonton all over that country.

*By the Hon. Mr. Macpherson :—*

Q. Along the located line?—Along the trail line as marked on the map.

*By the Hon. Mr. Sutherland :—*

Q. Do I understand you to say that the line was located previous to your going to Livingstone?—Yes.

Q. What was your reason for going out on the old trail in preference to going out on the located line?—I wanted to take out carts, so as to take them through the country west of Livingstone, and there is no cart trail through that country,

Q. Do you mean to say that you could take carts through that country in the summer time?—Since then carts have been taken through there.

Q. On the located line?—I presume so, as the telegraph line has been constructed there since, and they were obliged to take a cart reel through with the wire.

Q. Do you know at what season of the year the line was put up; was it in winter?—I cannot say.



Q. Do I understand you to say that the line from Livingstone west was not located to Battleford?—The trail line, I think, is all that is surveyed.

*By the Hon. Mr. Scott:—*

Q. When were you over there; was it last year?—I think it was in the summer of 1875.

Q. What is the soil and timber on that route like?—For 30 or 40 miles west of Livingstone the timber is heavy spruce; after that you get into a bluff country with poplar bluffs, having large openings amongst them, interspersed with lakes and ponds.

Q. These bluffs would be principally sand hills?—From the nature of the timber I presume the subsoil must be sandy.

*By the Hon. Mr. Macpherson:—*

Q. Is, or is not, the country attractive for settlers?—It depended very much on the settler's own ideas. I am only speaking from memory as to the character of the soil.

Q. What kind of country is it from Pembina River to Jasper House?—It is a timbered country, covered with poplar, spruce, tamarac and swamps.

Q. What is the distance?—About 120 miles.

Q. Is it uninviting for settlement?—West of the Pembina River I do not think settlers would go into that country, but it is the only pass you can get to go through the Rocky Mountains.

OTTAWA, MONDAY, March 26th.

The Committee met at noon, but owing to the absence of an important witness they adjourned at 12:30.

OTTAWA, TUESDAY, March 27th.

MILNER HART, D.L.S., was called and examined as follows:—

*By the Hon. Mr. Aikins:—*

Q. Have you been Inspector of Surveys in Manitoba and the North-West?—Yes.

Q. What portion of the Province of Manitoba and the North-West did you inspect surveys in?—From Winnipeg; the principal meridian, westward.

Q. How far west?—To range 26, west.

Q. That would be as far as the neighbourhood of Fort Ellice?—About twelve miles east of that point.

Q. What kind of country did you find from Winnipeg west to the boundary of the Province, as to soil?—The soil as a general thing is very good.

*By the Hon. Mr. Macpherson:—*

Q. How many miles would that be?—About seventy-eight miles. There is about ninety miles of good land to the boundary of the Province.

*By the Hon. Mr. Aikins:—*

Q. Would there be any difficulty in constructing a railway over this ninety miles?—None whatever. It is a very level country and dry. There are a few swamps south and west of Wexbourne.

Q. Are those swamps of any great extent?—Not very great; one of them extends to the west a few miles.

Q. From the boundary of the Province to the Assiniboine, ninety miles westward, what kind of soil is there through that country?—There is about fifteen miles of sandy country to go through, a little west of the boundary. After that the soil is a fair sandy loam.

Q. Is it inviting for settlement?—Yes, a very fair country for settlement.

Q. Is there any timber?—The timber is scarce immediately along this base line, but north of the Riding Mountains there is an abundance of timber.

Q. What difficulties are there in the way of the construction of a railway from the west boundary of the Province west to the Assiniboine over the ninety miles to which you have referred?—I have never been to the Assiniboine there. We left off within twelve miles of it, and the only obstacle to that point is at the Bird Tail Creek.

Q. When you say there are no obstacles but Bird Tail Creek, do you except the Saskatchewan?—There is no difficulty in crossing the Saskatchewan.

Q. At what point would there be no difficulty in crossing the Saskatchewan?—At townships twelve and thirteen.

Q. Would that be nearly in a direct westerly line from Selkirk?—The direct westerly line would be about six miles south of Selkirk.

Q. Is the Saskatchewan liable to floods at the crossing?—No.

Q. Is it shown on the Dominion map whether there are high banks, or whether it is a plain at the crossing of the Saskatchewan to which you refer?—It is perfectly plain.

Q. Was that determined by actual survey?—Yes.

Q. Have you ever crossed the Saskatchewan on the old cart trail?—Yes; at that crossing there is a very wide valley and very deep. The hills are high. The point I refer to where it is plain is about ten miles south of the cart trail.

*By the Hon. Mr. Macpherson:—*

Q. Do you say there is a district of five or six miles in width along the Saskatchewan where it could be crossed at any point without difficulty?—Yes; four or five miles.

Q. What is the actual width of the stream?—The actual stream is about sixty or seventy feet wide.

*By the Hon. Mr. Vidal:—*

Q. Are the banks high?—No; they slope gradually down to the river with a hard bottom—that is at the point nearly due west of Selkirk.

Q. You speak of difficulty in crossing Bird Tail Creek—at what point?—On the Saskatchewan cart trail. The banks there are high. It is about ten miles east of Fort Ellice.

Q. Have you been south of that?—No; I did not go south of that.

*By the Hon. Mr. Scott:—*

Q. How far is that south of the present line as located?—Bird Tail Creek is about one hundred miles south of Northcote, the most northerly point of the located line, near Duck Mountain.

*By the Hon. Mr. Aikins:—*

Q. You are not able to speak from personal observation as to the character of the country south of Bird Tail Creek?—No; they had not extended the line that far when I was there.

Q. Being Inspector of Surveys your duty was to examine the country north and south?—Yes.

Q. What is the general character of the country for settlement?—It is a very fair country, with the exception of that sandy belt to which I have alluded, which is about fifteen miles wide.

*By the Hon. Mr. Macpherson:—*

Q. Is that so sandy as to be too light for settlement?—You might pick out a few quarter sections favorable for settlement, but as a general thing the soil is too light for tilling, but might do for grazing. It extends down, as far as I know, to the Assiniboine.

*By the Hon. Mr. Scott:—*

Q. It runs north and south?—About in that direction.

*By the Hon. Mr. Simpson:—*

Q. Is it timbered?—There is a little timber on it.

Q. Is there plenty of water on it?—Yes.

Q. Good water?—Yes, the water is always good in the sandy country. From Winnipeg west to this sandy belt the land is very good; then west of that, to within

twelve miles of Fort Ellice, the land is not so good as on the east side of the sandy belt, but it is a very fair sandy loam. In the course of time I think it will all be settled, as it is capable of growing all that a man wants in that country.

*By the Hon. Mr. Aikins:—*

Q. Does that character of country extend far north towards the Riding Mountains?—It does on the west of Little Saskatchewan.

*By the Hon. Mr. Scott:—*

Q. How far north have you been?—I have never been further north than Riding Mountain House. That would be about eighteen miles north of the Saskatchewan cart-trail.

*By the Hon. Mr. Aikins:—*

Q. On the east of the Little Saskatchewan, from the Riding Mountain House towards Lake Manitoba, what is the character of the soil?—The soil is very good over the southern slope of the Riding Mountains, and between the Riding Mountains and Lake Manitoba the country is more suitable for stock-raising than agriculture, as it is wet land. West of the south end of Lake Manitoba the soil is very good.

Q. Does a similar tract of country exist between Lake Manitoba and Riding Mountains, farther north?—It extends about eighteen miles north of the northerly boundary of Manitoba—that is, as far as I know.

Q. What is the character of the country east of Lake Manitoba? Have you been there?—Yes, I have been there. I do not call it a very good country; it is not as good land as that to the south of Lake Manitoba. It is a gravelly country, full of large swamps.

*By the Hon. Mr. Scott:—*

Q. Is there much wood in it?—Yes; it is full of poplar timber.

Q. Not such forests as we have here?—No; islands of timber.

Q. What is the extent of those groves?—Perhaps about fifty acres in each grove, with swamps between. The woody islands are gravelly soil, and dry.

*By the Hon. Mr. Aikins:—*

Q. What is the country between Shoal Lake and Lake Winnipeg?—It is a tolerably good country.

Q. Is it fit for grazing or tillage?—It is fit for grazing more than for tillage.

Q. Did you, while inspecting the surveys examine any portion of the country east of Lake Winnipeg?—No; that was not in my division; it was Mr. Whiteher who had that section.

Q. What extent of land has been explored north and south of the fourth base line?—I have inspected the whole of the survey west to the full extent of the Province, and from the boundary west to within ten miles of Fort Ellice, a belt thirty-six miles wide, between lat. 49.50 and 50.20.

*By the Hon. Mr. Macpherson:—*

Q. Do I understand you to say that the whole of that country, with the exception of the sandy belt fifteen miles wide, is a fine country for the production of cereals?—Yes; the greater portion of it is.

Q. Is there any part of Ontario that you could compare it to?—From Red River to the south end of Lake Manitoba the land is so superior to anything I have ever seen that it is difficult to make a comparison.

Q. From Portage La Prairie westward—what is it like?—There is some land in the vicinity of Brantford I could compare it to. It is not heavy soil; it is sandy loam.

Q. Then we are to understand that up to the western boundary of Manitoba the land is very superior, and west of that it is excellent?—Yes.

*By the Hon. Mr. Aikins:—*

Q. There is shown on the map a number of streams west of the Saskatchewan on this base line to which you refer. Is there any difficulty in crossing them?—No.

Q. What kind of streams are they?—They are small, with the exception of Bird Tail Creek.

*By the Hon. Mr. Scott :—*

Q. Did you take the levels?—No; I only examined them with the eye. They are between thirty and forty feet wide; with the exception of Bird Tail Creek, they are all low banks, that is, south of the cart trail.

Q. Are there deep ravines along those creeks?—I don't suppose the banks are more than thirty or forty feet high.

Q. Are there valleys outside of those banks?—No; only small valleys. Oak River, for instance, has very little valley—only a gentle slope; I could drive across it anywhere, and the others are very small ravines.

*By the Hon. Mr. Macpherson :—*

Q. How far west from Winnipeg have you inspected the surveys?—About one hundred and eighty miles, to within ten miles of Fort Ellice. There would be no difficulty in constructing a railway along that distance, with the exception of Bird Tail Creek. That is my opinion after examining the country.

*By the Hon. Mr. Aikins :—*

Q. What did you find with regard to settlement from Winnipeg westward?—There are settlements all the way along to Palestine, about eighteen miles west of Lake Manitoba, about the boundary of the Province.

*By the Hon. Mr. Sutherland :—*

Q. When were you there?—I left there in June last. There are a few settlers also, near the Government depot, at the Riding Mountain. There are also a few at the Little Saskatchewan, and a few up the valley of the Saskatchewan, towards the Riding Mountain House.

*By the Hon. Mr. Aikins :—*

Q. Are there any Mounted Police in the section to which you refer?—Yes; there was a detachment at Shoal Lake, on the North-West Territory, and one at the Little Saskatchewan, and one at Palestine.

Q. With regard to the water of the country—is it good, or are there many running streams?—There are not a great many running streams through there. There were no wells dug by the settlers, but I should say you would not have to go more than twenty-five or thirty feet for water. The water in the streams is good; the Little Saskatchewan, Bird Tail Creek, and White Mud River, have very good water.

*By the Hon. Mr. Sutherland :—*

Q. Did you come across any springs?—Yes, a few.

*By the Hon. Mr. Scott :—*

Q. Is the poplar wood of that country equal to our soft maple?—It is a better timber than our soft maple. It is the balm of Gilead.

Q. How far up on the line of railway have you been?—I have not been more than thirty-six miles from Selkirk.

*By the Hon. Mr. Haythorne :—*

Q. Would that district supply useful materials for railway construction, such as timber for sleepers, and stone for masonry?—There is boulder stone on the Little Saskatchewan, but there is nothing for ties, except at the Riding Mountains, or the tamarac swamps of the Assiniboine.

Q. Is the tamarac of those regions similar to that of Canada?—Yes, the same as the tamarac of Canada.

Q. What is the quality of the spruce there?—It is large and rather knotty.

The Committee adjourned at 1 p.m.

OTTAWA, Wednesday, 28th March, 1877.

ED. W. JARVIS, Civil Engineer, called and examined as follows :—

*By the Hon. Mr. Aikins :—*

Q. Where do you reside?—I reside at Winnipeg.

Q. You spent some considerable time on the Intercolonial Railway?—Yes; I was five years on the Intercolonial.

Q. You have also been over a large portion of the line from Keewatin to the Pacific?—Yes; I have been over nearly the whole line, with some small exceptions, from Keewatin to the Pacific.

Q. Did you locate any portion of the line from Keewatin to Selkirk?—I was not on the locating surveys, but I was on the preliminary surveys. I was in charge of the first party that made the survey through from Keewatin to Red River.

Q. Does the line as located follow any portion of the line you surveyed?—Yes; it follows that line very closely until it comes near Red River.

Q. Can you describe to the Committee from the map, what portion of the line as at present located follows the line you made?—It follows from Keewatin to Shelly station, within thirty-five miles of Selkirk; the distance from Keewatin to Shelly is about eighty miles on the line I ran, from there I ran a line due west to Red River.

*By the Hon. Mr. Sutherland:—*

Q. Where did you strike Red River with that line?—I crossed about ten miles north of Winnipeg, half way between the upper and lower forts.

*By the Hon. Mr. Atkins:—*

Q. Have you been over the present line as located to Selkirk?—Yes; I have been over it.

Q. Did you in your survey follow this line under instructions, or did you follow it as the one you thought best adopted for the construction of the Pacific Railway?—I followed it as the most direct way to get to Red River; it was a comparatively unknown country, and our object was to reach Red River at any point in the most direct way possible. In 1871, when we made this survey, the country between Keewatin and Red River was comparatively unknown, and our object was to make the most direct line without extending our explorations north or south of that line.

Q. Have you ever gone over the country a short distance south of the located line?—Yes; I have explored the country south of that line.

Q. In your capacity as engineer?—No; I did not explore that for the purpose of survey in connection with the railway, but a survey of it has been made by the Government.

Q. Had a slight deflection been made from the located line to the south, from Keewatin towards Red River, would the difficulties experienced on section fifteen have been avoided?—Yes; they would have been obviated to a considerable extent.

Q. What difficulties do you refer to?—Difficulties in the construction of the railway. There is some heavy work on the section known as "section fifteen." In the thirty-five miles between Keewatin and Cross Lake there are heavy rock cuttings which would have been avoided on the southern line. The rock extends the whole distance between these two points on the located line, but on the southern line the heavy rock work would have ended about half-way.

*By the Hon. Mr. Macpherson:—*

Q. Can you tell us why that route was selected in preference to the one where the work would have been lighter?—I believe it was selected as being a more direct line to Selkirk.

Q. Can you tell us why Selkirk was the point specially selected?—No; I cannot.

Q. Is the crossing of Red River easier there than at what would have been the crossing had the southern line which you refer to been selected?—I think not. I think the crossing I selected, twelve miles south of Selkirk and ten north of Winnipeg, is better than the crossing at Selkirk.

Q. You think the crossing would be easier and cheaper at that point than at Selkirk?—I think so, from what I have seen of the crossing at Selkirk.

Q. Would the line by the southern route from Keewatin to Red River have been longer than the present located line?—The line would have been slightly longer to the river, owing to the river being reached at a point further west; but it would not have added to the length of the Pacific Railway.

*By the Hon. Mr. Atkins:—*

Q. Did you see the maps and plans of this southerly route which would enable you to form the opinion you have just expressed?—Yes; I have seen the plans.

Between Selkirk and the crossing I have referred to, twelve miles further south, I am aware there are some rapids in the river, and to render the stream navigable some improvements would have to be made.

Q. Is the river navigable from the point referred to by you to Selkirk?—Certainly it is. There is a daily line of steamers running up and down there all summer during navigation.

*By the Hon. Mr. Scott:—*

Q. How long is navigation open there during the season?—About six months.

*By the Hon. Mr. Sutherland:—*

Q. Do you know if any of the lake boats go up to Winnipeg through these rapids at any time?—I really do not know.

Q. Were you in Winnipeg last spring?—Yes.

Q. Do you know if the Hudson's Bay Company's steamer on Lake Winnipeg came to Fort Garry?—I don't remember whether she did or not; but I remember seeing her at the lower fort.

Q. For what draught steamers is the river navigable to this point you refer to?—It depends on the season of the year. I believe soundings were made by the Government engineers in order to bring down barges with iron and they found a channel with four feet of water.

Q. Was the iron taken down to Selkirk by river?—Yes; a considerable portion of it was.

Q. Is the navigation susceptible of easy improvement?—Yes; I think it could be easily improved.

Q. What would be necessary to render it navigable?—All it would require is to take some boulders out to straighten the channel. There is plenty of water in the channel.

Q. Then, if these boulders were removed the river would afford the same facilities for navigation to the point of crossing you refer to as at Selkirk?—Yes; there is plenty of water in the channel if the boulders were removed.

*By the Hon. Mr. Girard:—*

Q. Would the facilities of construction afforded by the line first projected to Winnipeg compensate for the difference in length between it and the located line east of Red River?—I believe that the extra length would be more than paid for by the difference in work between Keewatin and Winnipeg.

Q. Which line would facilitate more the colonization of the province?—The southern line, certainly. On the located line there is no open country at all east of Selkirk, and there is very little land available for settlement, while on the line to the south there is a belt of prairie country about thirty miles wide, fit for settlement.

*By the Hon. Mr. Scott:—*

Q. How far north of the located line have you travelled?—As far as Winnipeg River, a distance of about twenty or thirty miles.

*By the Hon. Mr. Macpherson:—*

Q. What sort of country did you find there?—Broken, rocky country, very similar to Section 15.

Q. Fit for settlement?—No; it is uninviting for settlement.

*By the Hon. Mr. Scott:—*

Q. Where does the good land begin, at the railway, or is it further south?—It is to the south of it.

Q. How far south?—It begins at Selkirk and runs diagonally to the south-east.

Q. Then your line from Keewatin to Winnipeg would not touch that good country at all?—Yes; it would run through thirty miles of the good land.

*By the Hon. Mr. Girard:—*

Q. Would there be any more difficulty in constructing a bridge across the river at St. Boniface than at any other place from Winnipeg to Stonefort?—I think there would be no great difficulties in constructing a bridge just below Winnipeg, but it would probably cost a little more than at the point I speak of.

Q. Would it be more difficult than at the crossing at Selkirk?—No; I imagine not.

*By the Hon. Mr. Aikins:—*

Q. From the maps and plans you have seen, could you form any opinion as to the difference in cost between section fifteen and the southerly line?—I have never given it any consideration as to the relative cost of the two lines.

Q. If the southerly line had been continued on to Winnipeg, making allowance for the deflection of the river, would there have been any difference in the length, as compared with the line between Keewatin and Selkirk?—There would be no difference in the length of the railway, as a whole; a local difference would arise from Winnipeg being further west than Selkirk.

Q. At the point you speak of where your line struck the river, did you examine the bank of the river to see if there would be any difficulties in constructing a bridge?—Yes; we examined it and made a survey of the river the whole way to Winnipeg.

Q. Have you been through the country between the west side of Red River and the narrows of Lake Manitoba?—No; I have never been up there. I cannot speak as to the kind of country there is in that section, except from hearsay.

Q. Is the telegraph line constructed from Selkirk west to the Narrows?—Yes.

Q. Do you know that there has been any difficulty in keeping up the line from Selkirk to Northcote?—Yes; there has been great difficulty in keeping it up. A year ago the line was down for two or three months.

Q. Do you know why the line was down?—Yes; the poles had been stuck up in the snow and frozen moss, and when the snow melted they fell. The contractor could not get in there in the summer, and he had to do the work in the winter.

Q. Why could he not get in there in the summer?—I believe it was too swampy to go in there in summer.

Q. Has the line been repaired?—Yes; it has been repaired.

Q. When?—It was repaired last summer,—sometime last July.

Q. Why were the facilities for re-erecting the line in the summer greater than they were before, when the line was constructed?—I do not presume the facilities were any greater, but absolute necessity compelled them to go in there to open up the line again. The trouble was to go in there originally. The materials were distributed along the line in the winter, and there would be no very great difficulty after that in re-erecting the poles in the summer.

Q. Do you know whether those surveys were made across the Narrows in winter or in summer?—I believe surveying parties were out at both seasons, but I heard parties speaking of the difficulties of locating a line there in summer. I never travelled over that line myself.

Q. Have you seen the maps and plans of the section from Shoal Lake to Northcote?—Yes; I have seen them.

Q. As an Engineer, what opinion would you form from these maps and plans, as to the difficulty of constructing a railway there, and finding a solid road-bed?—I presume there is no very great difficulty, judging from the maps and plans. The plans scarcely show any more than the general direction of the line.

*By the Hon. Mr. Macpherson:—*

Q. Have you seen the profiles?—Yes; they simply show the surface line.

*By the Hon. Mr. Aikins:—*

Q. Do the maps or plans show that any test pits have been made?—Not in any I have seen.

Q. Have you been at the Narrows?—Yes.

Q. How did you go there?—By water; in the spring of 1875.

Q. Did you examine the crossing of the Narrows so as to form any opinion of it as to the facilities it afforded for a Railway?—No; I made no examination whatever of that country.

Q. From what point west have you been over the located line?—From the crossing of the South Saskatchewan River west.

Q. What is the country like on the located line from the South Saskatchewan west to the Rocky Mountains?—I have not followed the located line through. I have only travelled over it as far as Battle River. We did not follow the present line, but crossed the Saskatchewan at the mouth of Battle River. I made no surveys west of Red River. I have only travelled across the plains. I have surveyed in the mountains, and on the other side in British Columbia.

Q. Have you been over the tract of country from Winnipeg west to the Little Saskatchewan south of Lake Manitoba?—Yes; I have followed the northerly cart trail which touches Lake Manitoba.

Q. In crossing the Little Saskatchewan have you been ten or twelve miles south of where the cart trail crosses it?—No; I have not.

Q. What sort of country is it from Winnipeg to the Little Saskatchewan?—It is prairie nearly all the way.

Q. Is the soil good or indifferent?—It is very good; it is one of the very best portions of Manitoba.

*By the Hon. Mr. Haytorne:—*

Q. From the Saskatchewan westward you cross several streams lying between the Saskatchewan and Bird Tail Creek, what are they like?—I don't remember any large valleys, except the Little Saskatchewan and Bird Tail Creek; these are the only two between Winnipeg and the Assiniboine.

Q. What is the character of the soil a little below Shell River?—I think it is a little more sandy there than to the east—rolling, sandy hills.

*By the Hon. Mr. Aikins:—*

Q. Would there be any difficulty in constructing a railway from Red River to the Little Saskatchewan?—No.

Q. Then the first difficulty that would be experienced would be at the Little Saskatchewan?—Yes.

Q. Where do the first difficulties occur in passing over the cart-trail from Little Saskatchewan in the direction of the Assiniboine?—I think it would be at the valley of Bird Tail Creek.

Q. The next difficulty would occur where?—At the Assiniboine itself.

*By the Hon. Mr. Scott:—*

Q. What is the character of those line crossings?—They are deep valleys in the prairie. The banks are level on each side, but a deep ravine is worn out by the stream. The channel is generally very small in comparison with the valleys. Bird Tail Creek may be 1,200 or 1,500 feet across.

Q. What would be the depth of the valley in the middle?—It might be 150 feet.

Q. By 1,200 feet across?—Yes; but, of course, that would not be the point taken for crossing. The crossing of the Assiniboine would be considerably wider and the same height.

*By the Hon. Mr. Aikins:—*

Q. Have you been over the country from the Assiniboine south of Shell River towards the South Saskatchewan where the located line crosses?—Yes; I have been over the trail through the Touchwood Hills from Carleton to the South Saskatchewan and Fort Ellice.

Q. What is the character of the country there?—From the Assiniboine to the Touchwood Hills is rolling prairie.

Q. Good for settlement?—Yes; there is some very good land there. I should think it would be very well adapted for settlement. The Touchwood Hills are rolling sand hills—small detached hills.

*By the Hon. Mr. Vidal:—*

Q. Would the Touchwood Hills form any obstruction in the construction of a railway?—No; none whatever. It would require some cuttings, but they would make capital ballast.

*By the Hon. Mr. Aikins:—*

Q. There is no special difficulty from the Assiniboine to the Touchwood Hills?—I do not remember any difficulty.



Q. From the Touchwood Hills towards Carleton, you have been over the country: is there any difficulty there?—No; there are no insuperable difficulties at all. It is a rolling country, and there would be some heavy work in sand and gravel in places, for a mile or two, between the Touchwood Hills and the South Saskatchewan.

*By the Hon. Mr. Macpherson:—*

Q. When you use the term "insuperable" do you mean very great difficulties?—I mean such difficulties as would induce an engineer to relinquish the line altogether and try some other section of the country. The country is very similar to that on the located line.

*By the Hon. Mr. Wi'mot:—*

Q. Will there be much bridging required on the located line?—There would be less bridging on the located line, but the heavy work at the Narrows would make up the difference.

Q. What is the country like? Is it fit for settlement?—It is not well adapted for settlement until you reach the South Saskatchewan. It is very similar to the section through which the line runs—a good grazing country; that is between the Touchwood Hills and the South Saskatchewan.

*By the Hon. Mr. Girard:—*

Q. If a railway were now in existence from the western boundary of the Province to Winnipeg, would it pay running expenses at present?—I think it would make running expenses as far as the settled portion of the Province, extends about sixty or seventy miles.

*By the Hon. Mr. Scott:—*

Q. What is the population in these?—I do not know. I base my calculation on the number of parties passing up and down, and the amount of trade between the settlements.

Q. Are you aware that the entire population along that proposed line of railway including Winnipeg, is only 25,000?—I do not know exactly.

Q. Still you undertake to say that a railway would pay there now?—I do not base the work it would do on the number of the population, but on the amount of traffic with parties passing through.

*By the Hon. Mr. Macpherson:—*

Q. Is that the most thickly settled part of the Province?—Yes; the westerly portion is the most thickly settled.

Q. It is along that line we are speaking of whatever traffic there would be for a railway in that Province would be found, and not along the located line?—Yes; the principal traffic would pass over the southern line.

*By the Hon. Mr. Aikins:—*

Q. Then if it were assumed that this railroad from Winnipeg west to the boundary of the Province would not pay, what traffic would the located line by the Narrows have?—If they could run it at all, I do not think it would do anything as a local line.

*By the Hon. Mr. Girard:—*

Q. What benefit to the Province would the located line from Selkirk west across the Narrows to the western boundary be?—It would be of no benefit whatever to the Province of Manitoba. It scarcely touches the province except in the north-east corner.

*By the Hon. Mr. Aikins:—*

Q. Which way is settlement growing from Winnipeg?—Principally to the west towards Portage la Prairie and White Mud River. There are settlements out as far as the Little Saskatchewan, and isolated settlers all along there.

*By the Hon. Mr. Sutherland:—*

Q. Are you aware of any settlements having been made south of the Assiniboine?—Yes; there is a large settlement at Pembina Mountain.

Q. Do you know anything of the Boyne settlement?—Yes; it is south of Winnipeg. I call it the Pembina Mountain settlement.

*By the Hon. Mr. Scott:—*

Q. How far is Pembina Mountain settlement from Winnipeg?—Seventy or eighty miles south-west of Winnipeg.

*By the Hon. Mr. Girard:—*

Q. What portion of the province contains the population?—I should judge, from appearances, one-half the population is on the western side of Winnipeg.

Q. How long have you resided at Winnipeg?—Eighteen months; but I have been there more or less for the last five or six years.

Q. When settlers go into that Province, what direction do they usually take?—They go west and south-west.

*By the Hon. Mr. Sutherland:—*

Q. Do you know of any settlers north of the located line?—No; except at the Red River, at Selkirk, and I think the Icelanders.

Q. What are these settlers north of the line?—They are natives; Half-breeds, the original settlers, and a few Canadians. I do not suppose there are more than a hundred in all:

(Signed,) E. W. JARVIS.

OTTAWA, Wednesday, April 4th, 1877.

The Committee met at noon.

EDWARD W. JARVIS re-called:—

*By the Hon. Mr. Macpherson:—*

Q. I think the Committee understood you to say that, if the line had been deflected a little south, starting from Keewatin, on a point further west, the heavy rock work and tunnelling on the located line would have been avoided?—Not the tunnelling. It would not affect it, inasmuch as the tunnelling is further east than that. There is only one tunnel on the line, and that tunnel is at the crossing of the Winnipeg River at Keewatin.

Q. Could that tunnel have been avoided?—I think not. It would have been difficult to avoid it.

Q. How far south of the located line would the line be that would avoid heavy rock cuttings?—It diverges from the present line at Keewatin, and runs south-west from that. The point where it turns west again would be as much as fifteen or twenty miles south of the located line.

Q. Where would such line cross Red River?—It would cross it about parallel to the present located line, some twenty miles to the south.

Q. I understood you to say, the other day, that the present traffic would pay the running expenses of a railway from Winnipeg to the western boundary of the Province. What sort of traffic did you mean? What extent of trains or railway accommodation did you contemplate when you said that?—Two trains a day would be sufficient at present—a train in and a train out—a mixed passenger and freight train.

*By the Hon. Mr. Girard:—*

Q. That is from Winnipeg to the western line of the Province?—Yes; from Winnipeg to the western boundary and beyond that.

*By the Hon. Mr. Haythorne:—*

Q. What would be the general character of the freight?—Very mixed freight. In the main freight carted from Winnipeg by teams going to the west; goods for trading parties going out, furs coming in, and supplies for the settlers in the west of the Province. We did a considerable amount of freighting ourselves this winter, with teams, taking out machinery and lumber for mills. There is no lumber in the western part of the Province.

*By the Hon. Mr. Macpherson:—*

Q. That would be the traffic by the line passing south of Lake Manitoba, and through the settled part of the Province?—Yes.

Q. Would a railway passing where the present line is located get any part of that traffic?—No. There would be no local traffic of that sort, and I do not think that through traffic would be shipped that way, owing to the bad state of the roads, that is with regard to the trading goods going to the west.

*By the Hon. Mr. Scott:—*

Q. Do you mean to say that all the freight to points west from Livingstone would not take the present through line if it were built?—Certainly it would. But I refer to the traffic between Winnipeg and the western boundary of the Province.

Q. How many miles do you calculate that road would run?—Between 80 and 100 miles west of Winnipeg.

*By the Hon. Mr. Haythorne:—*

Q. The traffic you speak of, would it be the traffic of Manitoba, or the traffic of the district beyond Livingstone?—No; it would be the local traffic of the Province, and the trafficking beyond that, and the traffic finding a market in Manitoba. I calculate on the whole of that traffic. Of course in the event of the line being continued to the west, it would be immaterial. The south line would have the additional benefit of whatever local traffic there would be, while there would be no local traffic on the located line. There would be little or none between Livingstone and Selkirk on the present line now or in the future.

*By the Hon. Mr. Scott:—*

Q. Have you been over that line?—No; I have never been over the present line.

Q. Where is your place of residence?—Winnipeg.

Q. Are you in business there now?—Yes; I am in the lumber business.

*By the Hon. Mr. Macpherson:—*

Q. When did you leave the service of the Government?—About June, 1875.

Q. Did you leave it of your own accord?—Yes; it was my own wish to leave. I had been in business in Winnipeg a couple of years previously, and I found I could do better by leaving the survey and attending to business there. Mr. Fleming requested me to go back again to the survey at Tête Jaune Cache, and to take charge of the party again, but I thought it would be better to remain in Winnipeg.

Q. Have you been over the country from the Red River eastwards to the Height of Land?—Yes; north of the present line. However, my line was run with the view of passing north of Lake Nepigon.

Q. Is there any considerable track of land along that line, between Red River and the Height of Land, fit for settlement?—No; there are no tracts of good land along it.

Q. What is the difference between Red River and the Height of Land?—About 380 miles in round numbers.

Q. How is it off for timber?—There is very small scrub pine.

Q. Scarcely merchantable?—No; not at all. In some parts there are a few sticks, but nothing to speak of. The country is of laurentian formation—nothing but rocks and mosses.

*By the Hon. Mr. Aikins:—*

Q. Have you ever been over the southern line which passes south of Shebandowan, known as the Dawson line and crossing the narrows of Lake of the Woods?—I have never been over that, except on the Dawson Route itself.

Q. Where you ever at Fort Francis?—Yes.

Q. Is there any country fit for settlement on the Canadian side of the boundary line?—Yes; there is quite a settlement on our side. The Hudson Bay Company had a large farm there when I was at that place; a number of settlers have gone in since, and some townships have been surveyed.

Q. Could the lumbermen send their timber over the falls at Fort Francis without breaking it?—Yes.

Q. So that there would be no necessity for making a lock to get the timber through at Fort Francis, in order to take it down to the Lake of the Woods?—No.

Q. Did many immigrants go into Manitoba last year?—No; not a great many.

Q. Did any go in from Minnesota?—Not many. Immigration has been dwindling for the last four or five years, owing to the grasshoppers.

Q. Have the grass-hoppers been much worse on the other side of the line through Dekotak, Montana and Minnesota?—Yes; we hrd none at Winnipeg last year.

*By the Hon. Mr. Macpherson:—*

Q. What would be the difference in length between the proposed line of yours and the located line between Keewatin and Caerlaverock Station at the elbow of the North Saskatchewan?—As near as I can scale it on the map, my line would be eleven miles shorter.

*By the Hon. Mr. Scott:—*

Q. Without having chained the ground could you form an estimate?—Yes; I think from the map I could form an estimate sufficiently accurate.

Q. Have you any means of forming an estimate of cost between the southern route and the located lines?—Starting from Keewatin, I should say the southern line would cost less,—because, although the expense may be somewhat heavier in the neighbourhood of the Riding Mountains,—all that expense would be more than balanced by the heavier work on Section 15 of the located line.

*By the Hon. Mr. Girard:—*

Q. Is there not a difficulty on the south line as compared with the located line?—Yes; there are difficulties at the crossing of the Assiniboine. That would be the heaviest work on the line. This southern line might be described as starting about two miles from Keewatin on the present line, and running westward to the north shore of Shoal Lake, thence to the Red River, crossing it a couple of miles north of Winnipeg, and passing eight miles south of the south shore of Lake Manitoba, and running due west to the Little Saskatchewan; thence in a general north-westerly direction to the Assiniboine River, near the mouth of Shell River, and from there direct to the junction of the present line at Caerlaverock.

*By the Hon. Mr. Wilmot:—*

Q. You say that that course is about eleven miles shorter than the present located line?—Yes.

Q. Without requiring connection from Winnipeg to Selkirk?—It would not require a north branch from Winnipeg.

*By the Hon. Mr. Macpherson:—*

Q. You say, in calculating the distance, you have not considered the branch from Winnipeg to Selkirk at all?—No.

Q. So that there would be a saving by your line of eleven miles in the length, and saving by not having to construct the branch of another twenty miles?—Yes; the total saving would be thirty-one miles of railway. Starting out from Selkirk from the end of the present located line, the saving would be about the same as starting from Keewatin, excepting the branch line to Selkirk. I make my calculations from Mr. Fleming's map.

*By the Hon. Mr. Scott:—*

Q. What is the total distance?—I measured both lines from the map yesterday, but I have not the figures with me. The difference is eleven miles in favor of the southern line, by actual measurement on the map. The whole distance is about 600 miles.

*By the Hon. Mr. Girard:—*

Q. In the construction the distance might be increased by the difficulties of the country, in 600 miles?—Yes. I see that the difficulties in crossing the Little Saskatchewan, which I spoke of in my former evidence, can be avoided by taking a route twelve miles south of the cart trail.

*By the Hon. Mr. Scott:—*

Q. Were there no instrumental surveys made on the southern route?—No; there were no instrumental surveys made on that line. I would like the Committee to

understand that I do not give this information because I have anything against the Engineers of the Pacific Railway, as I have nothing against them. I simply give it because I honestly believe the southern route is the best line, and not because I have any particular bias against the Government. It has been insinuated that I have been dismissed from the surveys.

Hon. Mr. SCOTT denied there had been any insinuation of the kind.

FRANK CLAYTON, Draughtsman in the Dominion Lands' Office, called and examined:—

*By the Hon. Mr. Aikins:—*

Q. You have the field notes and maps of that portion of Manitoba where it has been surveyed east and west of Lake Manitoba?—Yes; I have charge of all those notes.

Q. Could you refer to them and tell us what they show with reference to that country between Selkirk and the Narrows of Lake Manitoba, in the vicinity of the location line of railway?—It must cross that belt to go to the Narrows. The country immediately adjoining the located line, to the north-east, near the Narrows, is described by Mr. Dupe, in his official report to the Department, of block outlines comprising Townships 21 to 24, Ranges 4 to 9, west of the principal meridian, as follows:—

“The surface throughout the whole extent of country above mentioned is comparatively level, or gently undulating, there being alternating stretches of low, wooded ridges, in the highest places not exceeding ten or twelve feet above the general level, and swampy land with marshes and muskegs. These alternating ridges and marshes have a general north-westerly direction about parallel to the shore of Lake Manitoba. The ridges are composed of clay or clayey loam, with limestone gravel, and in some places beyond a distance of ten or fifteen miles from the lake, very stony. The marshes and muskegs are numerous, *many of the latter being impassable for carts*, and contain numerous small lakes and ponds. There are also several lakes of fair size, which, during the summer season, are the abode of numberless wild fowl. The largest of these lakes is “Dog Lake,” which is over twelve miles long by six or seven wide, occupying the westerly part of range 8 west, and easterly part of Range 9 west, in the Townships 23 and 24, and I apprehend it is about forty square miles in extent. In this lake fish of several kinds, including gold-eyes, whitefish and pike abound. In Township 24, Range 4 west, is another marshy lake which, with its marshy shores, includes not less than a whole township in extent. The third is Swan Lake, occupying the north-west part of Range 5 west, and the north-east part of Range 6 west, in Township 21, and with its surrounding marsh is over ten square miles in extent. The fourth in extent, and nearly as large as the last, is situate in the easterly part of Township 23, Range 5 west. From these, in decreasing extent, are lakes and ponds almost innumerable. One of which, about half a square mile in extent, situate in the northerly part of Section 13, Township 22, Range 5 west, is remarkable on account of its being surrounded (except three or four short breaks) by a natural stone wall from four to eight feet thick and two to five feet high above the surrounding marsh. The lake is shallow, with shelving beach of clay and small gravel and bottom of fine soft mud; it has some small fish, but no apparent inlet or outlet. The soil of that part along the shore of Lake Manitoba, and extending from ten to fifteen miles inland, and also that around Dog Lake, is rich black loam of excellent quality, though in some places the limestone gravel crops out in some of the ridges. At greater distances from Lake Manitoba the ridges are in many places very stony. The timber throughout is chiefly poplar of the three kinds found in Manitoba, and commonly known as white poplar or aspen, black poplar or balm of Gilead, and cottonwood; the latter, though less plentiful, attains greater size than the others. On the points of ridges which terminate at lakes or large muskegs, some oak is so be found, generally of small size; some of a fair size and quality are found along the shores of Lake

Manitoba, while scattered over the country east of Dog Lake, and from about the sixth correction line northwards some spruce is found, generally of small size, though in some instances attaining a diameter of two feet or more at the stump.

"The Canada Pacific Railway and Telegraph line runs from Section five, Township 21, Range 5, west, about north 50° west to the Narrows of Lake Manitoba, about Section 23, Township 24, Range 10, west."

*By the Hon. Mr. Aikins:—*

Q. With regard to Mr. Herman, what part did he survey?—The sixth correction line. The land adjoining the located line immediately west and north of the Narrows, is described by Mr. Herman and Mr. Bolton, D.L.S., as follows:—

"The surface is mostly flat and too low and wet for first-class agricultural lands. The average depth of soil is about twelve inches, resting on a hard clay and gravel bed—the lake bottom previous to the retirement of Manitoba waters. All the higher lands are covered with poplar timber from four to eight inches in diameter, the low portions extending in a north and south direction are the drainage beds from the northern slopes of the Riding Mountains, and consists of shaking bogs with hay, weeds, rushes and willow. Some good spruce timber is intermixed with other woods. Portions of the land are very well suited for settlement purposes, to stock-raisers and fishermen, and in course of time, when drained, will, no doubt, be found productive in grains also."

Mr. Edgar Bray's work was immediately west of Herman and Boltons' line, south of the located railway line about twenty miles and around Dauphin Lake. He reported as follows:—

"The country through which the lines run is mostly composed of good agricultural land. Swamps and marshes are found in various places, but they appear to form only a small portion of the total area. I might mention that in Townships 23 and 24, in Range 15, are composed of good, and mostly dry land. The most of these townships will be easily prepared for cultivation. I also found the land in Townships 25, 26, 27 and 28, in Range 18, to be mostly good, especially near the streams and rivers which cross the meridian exterior, between Ranges 18 and 19. The land on Riding Mountains is too rough and hilly to be of any use for agricultural purposes."

"With regard to the timber, I have to report that Township 22, in Ranges 17 and 18, and Township 23 in Ranges 15, 16, 17 and 18, are mostly covered with heavy woods of poplar, spruce, birch, oak, etc. In that part of the survey lying on and within three miles of Riding Mountains, the timber is unusually large, spruce being sometimes found with a diameter of nearly three feet. The timber in the balance of the survey is mostly poplar, but, with a few unimportant exceptions, it is small, but generally standing very thickly. In some places the land is covered with willows only. There are also a few open meadows or small prairies. In a considerable portion of Townships 26, 27 and 28, in Range 18, the timber has fallen; and a dense new forest of small poplars now covers the land."

The Committee adjourned at 1 p. m.

March 28.

A. L. RUSSELL, D.L.S., was called and examined as follows:—

*By the Hon. Mr. Aikins:—*

Q. You had charge of a party on the boundary survey under the British commission?—Yes.

Q. You also had charge of a surveying party for the purpose of making a special survey from Winnipeg westward?—Yes.

Q. What was the object, and what were your instructions?—The principal object was to determine longitude 102° west as a base line for surveys.

Q. Where did you start from?—From Winnipeg, at the Red River, and continued the line westward to Fort Ellice; thence seventy-five miles north; thence forty-eight miles west; thence twenty-four miles north thence seventeen miles west.

Q. In working westward did you take the levels?—In working from Winnipeg west to the 102nd meridian we took the levels all the way from there to Fort Ellice.

*By the Hon. Mr. Scott:—*

Q. Did you travel on the same line?—We travelled in the direction which best suited for the purpose of survey through the open country until we reached the 102nd meridian, and then we had a precise line to follow.

Q. What is the westerly meridian of Manitoba?—Ninety-nine.

*By the Hon. Mr. Aikins:—*

Q. What do your levels show, as far as the westerly boundary of the Province is concerned? Did you find that the ground rises as you proceed westward?—Yes, it gradually rises.

Q. What is the difference in altitude between Winnipeg and the western portion of the province?—About three hundred feet.

Q. What would be the distance from Winnipeg to the westerly boundary of the province?—About eighty miles.

Q. From the westerly boundary of the province to Fort Ellice, what is the difference in elevation?—There is a farther rise of about 320 feet.

Q. How much further west than that did you go?—The survey went through the open country where nothing would obstruct their view, therefore they did not go by direct lines; a better line could be found south of their route.

*By the Hon. Mr. Scott:—*

Q. What altitudes are there between the western boundary of the Province and Fort Ellice that would interfere with the construction of a railway line?—Looking south from the high lands near the Little Saskatchewan—from the cart trail—the country appears to be a plain of much lower elevation than where I was.

Q. From the 102nd meridian westward what is the character of the soil?—It is a good sandy loam.

Q. Did you go as far north as the railway line?—Within a very short distance of it; about fifteen miles south of the line.

Q. What is the character of the country from Fort Ellice westward of the 102nd meridian?—The soil is good, but rather lighter than what I have described further west.

Q. What kind of soil is it on the 102nd meridian?—It is sandy strips, but on the whole good throughout; fit for settlement with few exceptions.

Q. What is the appearance of the country?—It is a rolling prairie, with small islands of timber on the southern part. On the eighth base there is a good deal more timber. The soil between Touchwood Hills and the Assiniboine is generally well adapted for settlement.

The Committee adjourned at one p.m.

OTTAWA, Friday, April 5th, 1877.

The Committee met at noon.

S. J. DAWSON, C.E., called and examined.

*By the Hon. Mr. Aikins:—*

Q. You are pretty intimately acquainted with the section of the country from Keewatin westward to Red River?—I am acquainted with the country between the Lake of the Woods and Red River.

Q. Have you been over the line as located?—I had the country through which it passes explored many years ago, but have not been over the present line as located.

Q. What is the quality of the soil or its adaptability for settlement?—On the immediate border of the Lake of the Woods the country is very rough and broken, with numerous lakelets. Succeeding this, to the west, is a low, swampy region, full of what is called by the Indians "muskegs," but, on approaching Red River, the country becomes much better and the soil improves.

*By the Hon. Mr. Vidal :—*

Q. Is that on the line as located, or the line more to the south?—The located line passes through the country which I am describing. We had the whole country explored very thoroughly some years ago, with the view of finding the best route for a waggon road.

Q. To what extent eastward from the Red River is the land good?—I cannot say precisely how far the good land extends back from the Red River on the located line, but I should think about ten miles or so of very good land, and ten more of moderately good. To the south the belt of good land gradually widens, until opposite Fort Garry it has a breadth of thirty miles of low rich prairie. The country through which the located line passes, is wooded more or less.

*By the Hon. Mr. Aikins :—*

Q. Have you ever examined the country ten or twelve miles south of the located line, diverging from Keewatin southward, with the view to the construction of a road west to Red River?—We had an instrumental survey carried through from the Red River to the north-western extremity of Lac Plat and thence to the Lake of the Woods, and we had explorations and track surveys made to the north of that line.

*By the Hon. Mr. Macpherson :—*

Q. How far is it from Keewatin to the north-western extremity of Lac Plat?—About thirty miles in a south-westerly direction.

*By the Hon. Mr. Aikins :—*

Q. In a northerly direction how far would it be from Lac Plat to the located line?—It would be about ten or twelve miles.

Q. Could a better line be selected by going southward from Keewatin towards Lac Plat?—There might, on further exploration, but the country between Lac Plat and Keewatin is all much of the same character—rather rocky and broken with little ridges everywhere. From Lac Plat westward to Red River the country is sufficiently level, although exceedingly swampy in many places.

*By the Hon. Mr. Macpherson :—*

Q. If instead of taking a southerly line from Keewatin, you diverged from the located line further west, would you then find much of that rough country?—After leaving the rough country and proceeding west from Keewatin, you enter on a vast plain and might diverge westward in any direction without meeting further rough ground. With regard to the section between Lac Plat and Keewatin, I have never examined it with sufficient minuteness, to be able to say whether the present line could be improved upon by coming southward from Keewatin to Lac Plat.

*By the Hon. Mr. Aikins :—*

Q. If a line could have been found south of that some distance, would not the soil be better adapted for settlement?—The soil is not very well adapted to settlement in the country intervening between the Lake of the Woods and the prairies. It is all low and swampy, except in the vicinity of the northern part of the Lake of the Woods, where it is rocky, and, for the most part, rather barren. The best route through that country is by the present waggon road. It was selected after long and careful investigation of the whole region intermediate between the Lake of the Woods and Red River, and even on that line, although it avoids the rocky ground, and, in as far as possible, the swamps, there is very little good land east of the prairie. Along the banks of White Mouth River, a stream which the road crosses in the swampy district, there is a strip of moderately good land, but not of sufficient extent for a considerable settlement.

Q. How much more prairie country would there be east of Red River by going further south?—There is a belt of good prairie between the Red River and the woody country in the waggon road. When you leave that belt and go towards the Lake of the Woods, you pass through some of the low swampy region which extends through the whole of that country north to Lake Winnipeg. You have 30 miles of beautiful prairie country extending eastward from Fort Garry. And on the left of the waggon road you are south of the broken rocky region which extends west from



Keewatin, and have an excellent line for a railroad all the way to the Lake of the Woods.

Q. Does this rocky region extend east as well as west of Keewatin?—Yes; the country east and west of Keewatin is very broken.

Q. And for about the same distance?—From all I can learn it is not quite so rough to the east of Keewatin as to the west of it, but it is a very difficult country.

*By the Hon. Mr. Macpherson :—*

Q. The rough country extends to about the same distance east and west of Keewatin?—Yes; and a very rough country it is.

*By the Hon. Mr. Aikins :—*

Q. Have you ever examined the crossings of the Narrows of the Lake of the Woods?—Yes; I have had soundings taken, and a rough map made of the islands at the Narrows of the Lake of the Woods. The channels are in general narrow. The main channel, I think, is 1,400 feet in width, according to the best of my recollection.

*By the Hon. Mr. Scott :—*

Q. What is the depth of water in the channel?—At one part, in the middle of the channel, it is 35 feet.

Q. Does it graduate from that?—Yes; otherwise the channels vary from two or three up to fifteen feet. The average depth across the whole of the channels does not exceed 12 to 15 feet. In great part the crossing would be over flat ground covered to a moderate depth with water.

*By the Hon. Mr. Macpherson :—*

Q. Do you know what the bottom is like?—It is a hard bottom—a sort of mixture of sand and clay—in some places gravelly.

Q. How would you propose to have built a bridge then?—The channels are completely land-locked and sheltered by islands, and I would have supported the bridge on cribs.

Q. Do you think that would have been sufficient?—Yes; cribs once fairly settled afford a substantial foundation.

*By the Hon. Mr. Scott :—*

Q. Is the water subject to irregular levels?—The extreme difference between high and low water in the Lake of the Woods is not more than from four to six feet; it certainly does not exceed six feet.

*By the Hon. Mr. Wilnot :—*

Q. Is there a strong current?—There is a current, but not very strong, between the islands. The fact is, what is called "the Lake of the Woods," is formed of two lakes—that south of the Narrows is called "the Lake of the Sand Hills," and the part north of the Narrows the "Lake of the Woods;" it is also called "Clear Water Lake" by the Indians. There is no great difference of level, no practically appreciable difference.

*By the Hon. Mr. Vidal :—*

Q. There would be no great danger from the rush of ice?—No; the locality is completely land locked—besides, the ice is easily guarded against in such a situation. Numerous islands protect the position both from wind and ice.

*By the Hon. Mr. Aikins :—*

Q. Is there any very heavy rock cutting in the country east of the Narrows?—The country east of the Narrows is very broken. Part of it is good, but on the whole it is rather hilly, and one of the questions that occurred to me was whether this country would form a longer or shorter rough section than that through which the line now passes by Keewatin.

*By the Hon. Mr. Macpherson :—*

Q. Did you ascertain the extent of it on the southern line?—Approximately.

*By the Hon. Mr. Scott :—*

Q. Did you take levels?—Yes. I took the levels along the water stretches, not over the land. The levels have been taken by the Pacific Railway Survey down to Sturgeon Falls, and 40 miles west of that, and in the intermediate section between that

and the Narrows of the Lake of the Woods the levels have not been taken, as I understand, nor an instrumental survey made.

*By Hon. Mr. Macpherson:—*

Q. Have you passed over that country?—I have been through a great deal of it, and had exploring parties sent through it.

Q. What opinion have you formed of it?—My opinion is that the southern would have advantage over every other route, and one of these would be that it would bring into play all those navigable water sections, rendering a wide extent of country tributary to its traffic.

Q. How far are the falls from the outlet of the river?—The point called Sturgeon Falls, is about 57 miles from Fort Francis, and the navigation is unimpeded all the way. Then a lock at Fort Francis would have connected the navigation of this stretch on the Rainy River and the Lake of the Woods, giving a total navigation of 177 miles. To have taken advantage of this navigation would not have deflected the line of railway from the most direct course to Fort Garry.

*By Hon. Mr. Aikins:—*

Q. What distance is it from Sturgeon Falls to the crossing at the Narrows, by water?—57 miles to Fort Francis and 120 miles from that to the Narrows.

*By Hon. Mr. Scott:—*

What is the distance from Lake Superior to Sturgeon Falls, by the route which you have indicated on this map?—About one hundred and sixty miles.

*By Hon. Mr. Aikins:—*

Q. What is the character of the impediments on Rainy River?—Between Fort Francis, where the canal is being made, and the Lake of the Woods, there are two rapids which would require improvement—the Manitou and the Long Rapids, or as it is sometimes called, the Long Sault. At the Manitou there is sufficient depth, but a strong current at certain stages of the water. At the Long Rapid the current is also strong and, although the fall is not considerable, a lock might be required. A dam at this place would flood the Manitou Rapid; the distance between these two rapids is about six miles. The more powerful of the small tugs which we used at Rainy River have frequently ascended both rapids, without being towed, but generally the tow lines was used. The larger tugs required four feet of water—a depth sufficient for vessels drawing five feet might easily be provided for throughout.

Q. What lockage would be necessary?—The total lockage required between Rainy Lake and the Lake of the Woods might be about 28 or 30 feet.

*By the Hon. Mr. Macpherson:—*

Q. What is the distance from the Narrows of the Lake of the Woods to Winnipeg?—From the Narrows to the head of the north-west angle bay, about ten miles; and from thence by the waggon road to Winnipeg, about ninety miles, in all; one hundred miles or a little over.

*By the Hon. Mr. Aikins:—*

Q. What is the distance, by your proposed railway line, between the Narrows and Sturgeon Falls?—About 120 miles in a direct line; allowing for deviations in such a broken country, it might be 130 miles or even more.

*By the Hon. Mr. Scott:—*

Q. What is the distance by water from Sturgeon Falls to the Narrows of the Lake of the Woods?—From Sturgeon Falls to Fort Francis, the distance is about fifty-seven miles, and from thence to the Narrows, by Rainy River and the Lake of the Woods, about 120 miles, in all, say 177 miles. On the completion of the works now in progress on Rainy River, the whole of this stretch would have become available as a link in the through communication, as soon as a railroad had reached Sturgeon Falls from the one side and the Lake of the Woods from the other. This was, in my opinion, the readiest way of obtaining a thoroughly available line of communication between Lake Superior and Red River. By taking advantage of this water stretch of 177 miles, the ultimate all rail route would not have been in the least interfered with. More immediate communication would have been obtained, and the

construction of this intermediate section of railroad could have been proceeded with deliberately, as circumstances would permit.

*By the Hon. Mr. Scott:—*

Q. Your line is laid out by Shebandowan; where does the line now adopted strike off?—At the Sunshine River, a small tributary of the Mattawin, whence it runs off, northerly, to the line first explored from Nipigon Bay, crossing the little Savanah River, near Lac des Mille Lacs.

Q. Describe the route you suggested?—As you will see on this map, it passes by the valley of the Mattawin and along the north side of Shebandowan Lake, to Kasha-hoiwe Portage, thence westerly along a valley leading through the Height of Land, then by the Windegoostegan lakes to the valley of the Little French River and from that place to Sturgeon Falls on the Seine. From Sturgeon Falls to the Narrows of the Lake of the Woods—a distance of about 130 miles, in as direct a course as could be found, touching, perhaps, on the two northerly arms of Rainy Lake, and from the Narrows, in a line nearly direct, over a very easy country to Fort Garry, a further distance of about one hundred miles, making nearly a straight course, and as a consequence, the shortest all-rail route possible from Lake Superior to Fort Garry.

*By the Hon. Mr. Aikins:—*

Q. What extent of this line has been surveyed and found practicable?—The eastern section, that is, the part of this line reaching from Lake Superior to Sturgeon Falls, was first explored by parties attached to the works under my direction. It was subsequently surveyed by an engineer of the Pacific Survey, and found to be practicable; and I believe that the same engineer also reported favourably of the ground for some forty-five miles westward of Sturgeon Falls.

*By the Hon. Mr. Scott:—*

Q. What is the length of the part remaining unsurveyed between Sturgeon Falls and the Narrows of the Lake of the Woods?—About eighty miles.

*By the Hon. Mr. Macpherson:—*

Q. What is the distance from Sturgeon Falls to the crossing place at the Narrows?—As I have already stated, about one hundred and thirty miles, allowing for deflections.

*By the Hon. Mr. Macpherson:—*

Q. What is the character of the country in that unsurveyed section?—It is generally a rather rough country, more especially on the north coast of the Lake of the Woods, but the hills are of no great elevation and are mostly isolated. I have no doubt that a practicable line could be found on thorough exploration. If not, then a line should be run from Sturgeon Falls to Keewatin or Rat Portage. There would be a deflection and an addition to the distance in going by Rat Portage, but Sturgeon Falls should be the first objective point for a railroad running from Lake Superior to Manitoba. It is too important a point to be left out of consideration.

Q. What is the extent of rough country on a line from Sturgeon Falls to the Narrows of the Lake of the Woods, as compared to the rough sections east and west of Keewatin, on the present line?—The extent of rough ground on both lines might be about the same, say eighty miles, but on the line to the Narrows, I do not think that any part of it would be quite so difficult as section fifteen, immediately west of Rat Portage.

*By the Hon. Mr. Scott:—*

Q. Taking Red Rock at Nipigon Bay, as a point common to both projected lines, on their being continued to the eastward, how would the line, which you recommend, compare as to distance with that laid out by the Pacific Railroad Survey—that is, between Nipigon Bay and Red River?—I do not think that there would be any great difference in the aggregate distance; lines without very considerable deviations from a given course, cannot be looked for in such a broken country. The line of the Pacific Railroad Survey would run to Chief's Bay on Lake Nipigon, and thence through the northern country, by way of Keewatin, to Red River, and the line shown on this map would pass by Black Bay and Thunder Bay, to the valley of the Kaministiquia, and thence by way of Sturgeon Falls and the narrows of the Lake of the Woods to Fort

Garry. There would be a *detour* on this line in coming from Nepigon Bay to Thunder Bay. So also would there be in going from Nepigon Bay to Chief's Bay on the other line; and upon the whole, as I have said, I do not think there would be much difference in the total distance, while the Thunder Bay, Sturgeon Falls and Fort Garry line would be by far the shortest between Lake Superior and the Prairies.

*By the Hon. Mr. Aikins:—*

Q. What is the character of the country on the more southern line, as regards its adaptibility for agriculture?—In the eastern section, the country is too broken ever to become very valuable in an agricultural point of view. There are, however, occasional areas of good land, more especially in the river valleys, and the climate after getting some distance to the westward of the Height of Land, is very favourable. There is a fine and extensive tract of land on Rainy River which would become available for settlement, in the event of the line being carried to Sturgeon Falls.

*By the Hon. Mr. Scott:—*

Q. What is the difference in climate between Rainy River and Thunder Bay?—It is considerable. The summer at Rainy River is somewhat longer and very much warmer than at Thunder Bay. As an example of the very marked difference in climate between the eastern and western slopes of the water-shed, permit me to draw your attention to these two lakes, Lake Nepigon and the Lake of the Woods. You will see by this map that both are in the same latitude, or nearly so, and that the elevation above sea level differs but little, the climatic influence of what little difference there is being in favour of Lake Nepigon. The two lakes are about three hundred miles apart, but Lake Nepigon is to the east of the water-shed and the Lake of the Woods to the west. There is a good deal of difference in the length of the summer, and a still more marked difference in the average heat of the summer months. At Lake Nepigon, the ice sometimes remains until the beginning of June. At the Lake of the Woods, the spring opens early, and Indian corn grows well and always ripens. At Lake Nepigon only the hardiest wild fruits come to perfection, while at the Lake of the Woods the wild rice, wild grape, and other plants, requiring a high summer temperature, are abundant.

Q. What do the Hudson's Bay Company grow at Fort Francis?—They used, long-ago, to grow wheat and had a mill at the Falls, the frame of which was still standing when I first visited the country.

*By the Hon. Mr. Macpherson:—*

Q. Have they grown Indian corn there?—Yes, and do so still. The Indians have cultivated maize along Rainy River and at the Lake of the Woods from time immemorial. This beautiful country—doubly valuable for being in the heart of a region not otherwise well adapted to agriculture—will be, in a measure, left in the cold, through the unfortunate sweep made in locating the Pacific Railroad so far to the north, in a dreary and barren region, without any compensating advantage that I can see. But little work, comparatively, has, as yet, been done in deflecting the line to the north from the valley to the Mattawin, and, in my opinion, it is still a matter worthy of serious consideration whether the line to Sturgeon Falls should not yet be adopted. The expediency of this course would, however, depend on the result of a thorough and exhaustive examination *which has never yet been made* of the country intervening between Sturgeon Falls and Keewatin, for there is already, perhaps, too much work done between the latter place and the Red River to render it now advisable to adopt the crossing at the narrows of the Lake of the Woods, unless indeed the line could be deflected north-westward from that place to meet the section already graded east of Selkirk, and so avoid the rough ground of section fifteen altogether.

*By the Hon. Mr. Macpherson:—*

Q. Where are the pine forests which you mention, chiefly to be found?—On the tributaries of Rainy Lake there are occasional forests of pine; and it is to be found in greater or less quantity over the whole territory. The total area of country pouring its waters to the Lake of the Woods is about 33,000 square miles, and it is in this region that a supply of timber must be looked for for the prairie country to the west. Had the railroad been located on the southern route it would, in connection with the

water stretches, have rendered accessible by its means, have developed, eventually, a trade of very great importance to the settlement of the country, while the traffic so arising would be of no small importance to the railroad itself.

*By the Hon. Mr. Aikins:—*

Q. What is the character of Prince Arthur's Landing as a harbour?—You will observe on the map that Thunder Bay is well sheltered from every wind. It is, in fact, like an inland lake, and is not exposed to any surge, except what can arise within the bay itself. The landing is in a sheltered nook of the bay, and a comparatively small outlay on wharves would produce a harbour that for safety and facility of access could not be surpassed.

Q. How long does the navigation of the bay remain open in the fall?—The bay remains open all through November, and until the middle of December there is rarely much ice seen.

Q. The Kaministiquia River freezes over much earlier than the bay; does it not?—The Kaministiquia closes sometimes in the end of October, generally in the beginning of November. The current at that season is scarcely perceptible and it freezes over with the first frost.

Q. Does not a considerable surge arise within the Bay itself?—The fact of the Government engineers making a cut across the bar at the mouth of the Kaministiquia, in the belief that it can remain open, without walls of crib-work on either side, seeing that it is of soft alluvial material, shows that they do not believe in the possibility of any considerable surge arising. A few such waves as lash the exposed parts of the coast of Lake Superior, in stormy weather, would soon obliterate the cut. Moreover, as a proof of the tranquil character of the waters of Thunder Bay, I may mention that on the wharf at the landing there is a board shed one hundred and fifty feet in length, which is only about two feet eight inches above the level of the water. A single considerable wave would sweep this shed away, yet it has stood ever since the wharf was built.

Q. What sort of a harbour is the Kaministiquia?—It is well sheltered, but rather too narrow for large vessels, and altogether too contracted for a considerable traffic, besides sailing vessels could not enter it except with the aid of steam tugs.

*By the Hon. Mr. Scott:—*

Q. You say that the Kaministiquia closes earlier than the bay; is not the fact of the navigation remaining longer open at the landing, due to its exposed position?—There are always currents in every great body of water, and Lake Superior presents no exception to the rule. These currents keep up an uniformity of temperature, even in bays with much smaller openings to the main lake than Thunder Bay has. In fine weather there is usually a current from the west sweeping slowly but perceptibly past Prince Arthur's Landing, and curving round the bay. In short, the openness of the harbour in the fall is due to the temperature of the water, and not to its alleged exposure.

*By the Hon. Mr. Aikins:—*

Q. It would then have been better to have fixed the terminus of the Pacific Railroad at Prince Arthur's Landing?—The Kaministiquia will always be valuable as a harbour, especially for the smaller vessels wintering over; but I am of opinion that the line should be extended to the Landing, which is the nearest point at which the navigable waters of the lake meet the coast without any intervening bars, shoals, or other impediments.

Q. What is the depth of the cut across the bar, at the mouth of the Kaministiquia?—I cannot say precisely. The depth was about five feet six inches before the Government of Ontario undertook to dredge the bar in 1872; but Lake Superior has been slowly rising for some years past, and last fall the water was considerably higher than it was four years ago, at the least two feet six inches.

*By the Hon. Mr. Macpherson:—*

Q. What size of vessels can enter at present?—Vessels drawing about nine feet or nine feet six inches could just enter, with nothing to spare, as I am informed, last fall. The propellers which pass through the Welland Canal can enter, but when

loaded sometimes ground, probably in drifting against the sides of the cut, and have then to be lightened. The *Manitoba* of the Beatty Line, and the *Cumberland* of the Collingwood Line, can also get into the river, but Beatty's large propellers never venture in.

*By the Hon. Mr. Aikins :—*

Q. Would the Quebec steamer of the Beatty Line have room to turn if she got in?—If loaded it would be as much as she could do.

*By the Hon. Mr. Scott :—*

Q. But at the terminus the river is wider, she could turn there?—Even at that place she would not, I think, have much room to spare. I may say, however, that when the railroad is open to Manitoba, and Thunder Bay becomes the port for the traffic of the north-west, it will be of unquestionable advantage to have both harbours, and the dredging of the bar of the Kaministiquia, to a moderate extent, cannot, therefore, be regarded otherwise than as a useful work.

*By the Hon. Mr. Aikins :—*

Q. The Government possesses sufficient ground for a terminus at the landing, does it not?—The Government of the Dominion has eight acres at the landing, besides which the Government of Ontario has reserved a long strip on the shore for public purposes, which would always be available, and for which there would be nothing to pay.

*By the Hon. Mr. Macpherson.*

Q. What is the distance from Prince Arthur's Landing to Fort Garry by the line you propose?—Allowing for deviations, about three hundred and ninety miles at most.

Q. What is the distance to Red River by the line adopted, making a sweep round to the north by Keewatin?—Considerably over four hundred miles; I forget precisely how much.

The Committee adjourned at one o'clock.

OTTAWA, Friday, 6th April, 1877.

The Committee met at noon.

#### DISTRICT WEST OF RED RIVER.

S. J. DAWSON'S evidence was continued as follows :—

*By the Hon. Mr. Aikins :—*

Q. Have you been over the located line from Selkirk westward to the Narrows?—I have not been over the direct line. Many years ago I explored the country and passed not far from where that line now is.

Q. What is the adaptability of the soil for immediate settlement?—It struck me at the time as being a low swampy region between the Stone Fort and Lake Manitoba.

Q. Did you find the country interspersed with numerous muskegs, and occasional areas of better soil?—That is the character of the country.

Q. Would your remarks apply to that portion of the line immediately west of Selkirk on the located line, or to the country further west?—Immediately west of Selkirk the land is tolerably good, but it soon becomes low and swampy.

Q. Are there any settlements there?—Not when I was there, but settlements may have grown up since.

*By the Hon. Mr. Haythorne :—*

Q. How many years is it since you were there last?—It is eleven years since I explored that country, but I have been in Manitoba since that time.

*By the Hon. Mr. Vidal :—*

Q. Did your explorations extend northward from the located line?—Our explorations extended from Selkirk through Lake Manitoba, and along the other lakes crossing

over the Saskatchewan; we passed up by the valley of Swan River to Fort Pelly, and came down by the Assiniboine to Fort Garry. All those lakes seem to have been set down from cursory surveys which the staff under my direction made at that time.

Q. Can you give any information as to the character of the soil in the section traversed by the located line?—In all that flat country the soil is generally very good. The only drawback to it is from its extreme flatness, and its liability to be covered with water.

*By the Hon Mr. Wilmot :—*

Q. Is it a difficult country to drain?—I would not say it is extremely difficult. By a comprehensive system of drainage it might be made dry.

*By the Hon Mr. Macpherson :—*

Q. Is it very swampy near the located line?—There are swamps consisting of what the Indians call "muskegs" in that country. The prairie muskegs are depressions covered with water, and generally with a firm bottom, although in some cases they are bog muskegs as well as those with simple water over them.

*Hon. Mr. Aikens :—*

Q. From what you know of the country, do you suppose it would be likely that settlers would go in there and occupy these lands, while there is better land to the south-west?—I certainly think they would choose the best land first, settlements are likely to extend along these lakes, in consequence of the facilities for communication by water. I refer to Lake Manitoba, Lake Winnipegosis and Lac Dauphin. The country about Lac Dauphin is a very beautiful country, with rich land all through that section.

Q. Have you been at the Narrows of Lake Manitoba?—Yes.

Q. What is the character of the crossing at that point, and the soil in the immediate neighbourhood?—The soil about the Narrows, especially to the west I should say, is dry and good judging from the appearance of it in passing through there; but I never examined it with a sufficient minuteness to be able to say what sort of crossing there would be there. The object of our exploration then was to ascertain the general character of the country, and how a preliminary line of communication could be best opened through it.

*By the Hon. Mr. Sutherland :—*

Q. I suppose you did not sound the channel at the crossing to know what depth of water there was?—We sounded generally as we went through all those lakes, so as to ascertain the general depth.

Q. You do not recollect sounding the Narrows, particularly?—I do not remember that place particularly, but I remember the general depth of Lake Manitoba was comparatively shallow, with a very uniform bottom, almost as even as the prairie on either side of it. The information regarding this particular section between Lake Winnipeg and Lake Manitoba was chiefly obtained from Indians and Half-breeds, and by whatever means we could obtain it; but west of the lakes we explored the country, sometimes on horseback, as well as in canoes.

*By the Hon. Mr. Macpherson :—*

Q. How far is it south of the located line where you passed?—My information with regard to the precise location of the line I do not think would be very valuable, because it is only general, and I would not like to commit myself to any opinion about it further than as to the general character of the country. The quality of the soil is excellent; the only objection to it is that it is very low.

Q. You passed over to Manitoba several times?—Yes, every year, for a considerable period of time.

Q. How does the land south of Lake Manitoba compare with that in the vicinity of the located line, near Lake Dauphin?—The land is all of the same character—a deep black loam—in the valley of the Red River. When you get out west a short distance from the river there are gravelly ridges, but the general character of the soil is very good. The land along the located line, as far as Lake Manitoba, is generally very low; and in some parts along the north-east side of the Manitoba Lake you cannot even get to the shore without wading; there is a beach of shingle thrown up

by waves and ice, and inside, between it and the low prairie, an immense marsh. The country about Partridge Cross is visited with occasional floods.

*By the Hon. Mr. Aikins :—*

Q. Do you know anything about the country west of the Narrows, on the located line?—Yes; I had that explored between the Assiniboine and Lake Manitoba; it is a beautiful country.

*By Hon Mr. Haythorne :—*

Q. I think you have stated that these shores of these lakes present great attractions to settlers?—On the north-east side of the lakes the ground is, in some cases, low, but the south-west sides is better. There is a fine country about Lake Dauphin. I sent a surveying party in there to explore that country, and they reported it as being very beautiful.

Q. Do you feel yourself in a position to offer an opinion as to the located line between Selkirk and Northcote?—In so far as my opinion goes, I would prefer the line going to the south of Manitoba Lake, but then there might be engineering difficulties which I am not aware of that would make it advisable to take the present line.

*By Hon. Mr. Macpherson :—*

Q. Apart from the engineering difficulties, which line would you prefer as a road for the railway?—Apart from engineering considerations, I would judge the line south of Lake Manitoba to be the best, because it would pass over a very large extent of country fit for immediate settlement, and, at the same time, by tapping Manitoba Lake, it would open this lake road for settlement also.

*By Mr. Haythorne :—*

Q. Would it not be an important consideration to construct the line through the narrows, north, and avail ourselves of the water communication of the two lakes?—I think the object could be as well attained by passing to the south of Lake Manitoba. The stupendous crossing at the Narrows of Manitoba Lake strikes me as being one of the most objectionable features in the present line, and the engineers, in providing for the bridge, will have to be very careful to guard against ice shoves which have left such evidence of their force along the coasts.

Q. Are you aware of any mineral resources in the Lake Winnipeg region?—The north-east coast of Lake Winnipeg is likely to prove, in some parts, a rich mineral country. I know that valuable minerals, such as iron and copper ores, have been found; and I have also heard that traces of gold have been observed on the north-east coast. It is in a country which, from its rock formation, ought to possess mineral wealth. On the west side of Lake Winnipeg you have the flat Silurian limestones, and on the east the Huronian alternating with the Laurentian formation. It is the same in great part as that which has proved to be so rich in minerals in the Lake Superior and Lake Huron districts. The Bruce mines, for example, are in Huronian rocks.

*By the Hon. Mr. Aikens :—*

Q. From your acquaintance with the navigation of the Red River, is there any necessity for crossing so near the mouth of it as at Selkirk?—If they had crossed higher up, it would have been well to have a railroad running down so far as Selkirk, because a short distance above Selkirk there is a series of flat rapids which, at low water, can only be navigated by flat boats of light draught.

*By the Hon. Mr. Macpherson :—*

Q. Would not that navigation be easily improved?—The Government improved it somewhat by blasting out boulders that were in the channel some years ago under my direction, and it enabled boats to navigate it at a much lower stage of the water than they had ever done before,

*By the Hon. Mr. Vidal :—*

Q. Do you know the draught of the boats at present running on Red River to Lake Winnipeg?—Yes; they are very flat, stern-wheel steamers, and when they are full loaded they only draw three feet of water.

Q. Have these gone up and down regularly?—Not at extreme low water. They have not gone to the Stone Fort in low water.



Q. How long is it since you have been there?—About two years, and the boats were then running.

*By the Hon. Mr. Vidal:—*

Q. We understand that berges loaded with railway iron have been taken down there?—Boats can run down except in extreme low water, and there is nothing in the strength of the current to prevent them from coming up.

*By the Hon. Mr. Scott:—*

Q. You surveyed the Dawson Road at Lake Superior?—Yes; I was in charge of the staff sent out by the Government.

Q. The selection of Prince Arthur's Landing as a port was also made by you?—Yes.

*By the Hon. Mr. Macpherson:—*

Q. You surveyed the present terminus of the Pacific Railway at Kaministiquia as well as Prince Arthur's Landing?—Yes; I had three surveying parties under me; we surveyed the whole country from Pigeon River to the head of Thunder Bay in order to try and get access to the interior, and after exploring the whole of that region before there were any surveys or settlements whatever in that country I selected the same spot which is now called Prince Arthur's Landing, and I have never since had reason to change my views with regard to the expediency of having chosen that point.

Q. You still adhere to that preference?—Yes; and while selecting this point I also recommended the opening of the Kaministiquia so as to render it accessible to small vessels, and had soundings taken of the bar at the mouth when the first explorations were made.

HENRY A. F. McLEOD, C.E., was examined as follows:—

I am in the service of the Government at the present time, in the Pacific Railway office.

*By the Hon. Mr. Aikins:—*

Q. You have located a portion of this line in connection with the Pacific Railway survey?—Yes; I have located the line from Shoal Lake to Mossy River, the outlet of Dauphin Lake.

*By the Hon. Mr. Sutherland:—*

Q. Does the line run through a portion of the lake?—No; you can hardly call it a Narrows; it is quite a small pond a foot or so deep.

Q. What season of the year were you there?—I think it was in the beginning of November.

Q. Was the ground frozen?—It was about the 10th November, and we had snow when we commenced.

*By the Hon. Mr. Aikins:—*

Q. How long did it take you to locate the line?—From about the 1st November to the end of February.

Q. Why was the winter selected as the time for locating this part of the line?—There was no reason, except that we had finished work at Vermillion Lake in October, and immediately afterwards were sent to commence work there for the winter.

Q. Who had located the line from Selkirk to Shoal Lake?—It was located subsequently by Mr. Carr.

Q. Do you know the reason why you did not commence at Selkirk and extend west to Shoal Lake before commencing at Shoal Lake and extending westward to Mossy River?—I fancy the reason was to ascertain whether the crossing of the lake could be made, and, when that was ascertained, to start east and west?

Q. With regard to the quality of the soil, you were not in a position to judge of it in the winter?—Yes; I could judge of the quality of the soil by the amount of grass in the country. There was plenty to keep our horses alive. There was grass then up to some time in December.

Q. I suppose the country would be well supplied with grass?—Yes; in the open country.

Q. As the ponds were all frozen, I suppose you would not find any difficulty in getting through the country, even if there were muskegs to cross?—No; but we examined the muskegs, and such of these as we examined we found to be very shallow.

Q. What depth?—Generally from one foot to two or three; I have not found any to exceed five feet. The muskegs are narrow, and not to any great extent through the country from Shoal Lake to the Narrows.

Q. How frequently did you make examinations of the muskegs?—Whenever we passed a muskeg we examined it.

Q. How could you tell a muskeg in the winter?—They are generally open and no timber growing on them.

*By the Hon. Mr. Sutherland:—*

Q. Is there any valuable timber in the region you surveyed?—No; it is not valuable except for fuel. It is principally poplar. There is some oak along the lake—small sized oak.

Q. Did you observe any trace of fire in that country?—Yes; there had been fires in that country long ago, but not lately.

*By the Hon. Mr. Macpherson:—*

Q. Were you there when the telegraph was built?—No; it was built subsequently—after I had gone farther west.

Q. What season of the year was it built?—I do not know. I think they were building it in the winter the year before last. When I came through on my return I came down the line from Fort Pelly, in the winter of 1875-76.

Q. Were you ever, during the summer season, through the country between Shoal Lake and the Narrows?—No; not in summer.

Q. Never except when the grass was frozen?—No; always in winter.

*By the Hon. Mr. Scott:—*

Q. Did you locate the line from Livingstone westward?—Yes.

*By the Hon. Mr. Macpherson:—*

Q. Was the whole of that portion of the line between Shoal Lake and Mossy River located by you?—Yes.

Q. And that part of the country you never went through except when the ground was frozen?—No.

*By the Hon. Mr. Girard:—*

Q. Is it to your knowledge that some of your party in trying to ascertain the depth of some of the muskegs, could not find bottom with poles 20 to 30 feet long?—It is not to my knowledge. I am not aware of any places of that kind at all. In fact, it was with great difficulty we could push a pole down at all to the depth we got at, five feet. This is on the located line, of course; we did not examine it to any distance on either side.

*By the Hon. Mr. Haythorne:—*

Q. What is your opinion of the general character of the line you surveyed from Shoal Lake to Mossy River; is it a difficult line to construct?—It is a very good line, and so far as a railway is concerned, easy of construction.

*By the Hon. Mr. Macpherson:—*

Q. Did your survey include the Narrows?—Yes.

*By the Hon. Mr. Haythorne:—*

Q. Is the drainage good?—Yes: I should say it is very easy.

*By the Hon. Mr. Aikens:—*

Q. What will be the expense of crossing the Narrows?—There will be considerable expense. It is 2,800 feet across.

*By the Hon. Mr. Scott:—*

Q. What is the average depth of water?—The greatest depth, I think, as far as I can remember, is 15 feet; towards the shore it is 3, 4 or 5 feet.

*By the Hon. Mr. Macpherson :—*

Q. How did you propose to cross ?—On a bridge, some kind of pole bridge.

*By the Hon. Mr. Vidal :—*

Q. Not a draw-bridge ?—That I do not know.

*By the Hon. Mr. Scott :—*

Q. Is there any current there ?—It depends on the direction of the wind ; there is a current both ways.

*By the Hon. Mr. Vidal :—*

Q. Had you any opportunity of exploring the land on either side of the line ?—Not more than a mile or two. I generally walked over the country a short distance on either side to see if there were any lakes ahead, so that if there were they could be avoided.

*By the Hon. Mr. Haythorne :—*

Q. Is it a difficult country to see any distance ahead of you ?—Only in some cases ; it was generally woody.

*By the Hon. Mr. Girard :—*

Q. Have you passed to the south of Lake Manitoba ?—Yes, frequently.

Q. What kind of land is it ?—It is good land as far as Lake Manitoba, but from that west I should not say it is good. As far as White Mud River it is very good, not all good. There is much better land about Portage La Prairie.

*By the Hon. Mr. Scott :—*

Q. How far west of that point does the good land extend on the south line ?—It would probably be about fifteen miles west of Portage La Prairie.

Q. Did you go out by the old trail to Swan River ?—Yes. I went out to the west of Edmonton by that trail.

Q. How far south of the Riding Mountains did you pass ?—From Portage La Prairie I have been to the mouth of White Mud River, and from there across Little Saskatchewan River, on the cart trail, and then west to Fort Ellice.

Q. Was that an exploratory survey ?—No ; it was merely travelling through there.

Q. What was the opinion you formed of the suitability of country for a railway the cart trail ?—It is very difficult ; intersected with deep wide valleys.

Q. You passed over the cart-trail running west from Fort Ellice ?—Yes.

Q. What was the character of the soil you found between that and Touchwood Hills ?—It was very poor indeed. There may be a little good land between the Touchwood Hills.

Q. Taking the easterly range of the Touchwood Hills, between that and Fort Ellice, what was the character of the country ?—I should say it was very poor and sandy when you get north of Fort Ellice.

Q. What are the facilities for the construction of a railway from Fort Ellice to the South Saskatchewan, intersecting the Touchwood Hills ?—With regard to the quality of the soil, I think it would pass through a very poor country indeed—from Fort Ellice, until you get near the South Saskatchewan.

*By the Hon. Mr. Macpherson :—*

Q. You simply passed through the ordinary trail ?—Yes ; I passed through the Touchwood Hills once : I have been twice at Fort Ellice.

Q. How much of the country did you explore north and south of the cart-trail ?—No distance. I can only judge from what I saw from the cart-trail.

Q. How did you travel ?—On horseback sometimes, and sometimes on the buckboards.

*By the Hon. Mr. Scott :—*

Q. You know pretty well what the Touchwood Hills are ; do they present any serious obstruction to the building of a railway ?—It would be expensive crossing them.

TUESDAY, 17th April, 1877.

C. HORÉTZKY, C.E., was called, and examined as follows:—

*By the Hon. Mr. Vidal:—*

Q. Have you ever passed north of Lake Manitoba?—No, I know nothing of that country, of my own knowledge.

Q. Have you travelled west from Winnipeg, passing south of Lake Manitoba, towards the Little Saskatchewan?—Yes, I have travelled from Winnipeg by Portage la Prairie west by the cart trail.

Q. Have you ever been south of the cart trail?—No, I have never been south of the cart trail, east of the Assiniboine.

Q. What is the general character of the country between Winnipeg and where the cart trail passes the Assiniboine?—The soil is pretty fair, and there is a number of salt lakes in that vicinity.

Q. Are any of these salt lakes east of the Little Saskatchewan?—I think the salt lakes I refer to are beyond the Little Saskatchewan, on the cart trail.

*By the Hon. Mr. Sutherland:—*

Q. What is the character of the land around these salt lakes; does grass grow well on their margin?—Yes, with the exception of the salt lake at the point halfway between the Assiniboine and the Little Saskatchewan. There are a good many small salt lakes throughout that section of the country.

Q. What is the general character of the country that you passed over?—It is very fair.

Q. Did it seem to you that that country presented any great difficulties in the way of railway construction, as far as you went?—Where the cart trail crosses the Little Saskatchewan, the valley is very wide and deep.

Q. Is it the same with the smaller streams that cross the cart trail?—Passing Shoal Lake they present the same difficulties. Bird's Tail Creek is not so very bad. That is directly on the cart trail, and as far as Fort Ellice they are not very bad; but from Fort Ellice to Fort Pelly, there is Shell River—it is a very bad point. Pine Creek is also very bad. Ascending the Assiniboine on the east side, similar difficulties would be encountered.

*By the Hon. Mr. Scott:—*

Q. Did you pass through the section from Fort Ellice, across the Touchwood Hills, to any point on the present line?—No; I came down over the Touchwood Hills, to Qu'Appelle Fort. I was returning home from the Rocky Mountains at the time, and I took the best way I could to get to Fort Garry. I can only say I know the country from the Touchwood Hills to Fort Qu'Appelle, and down the Qu'Appelle River, but not north of it.

*By the Hon. Mr. Vidal:—*

Q. What was the character of the Touchwood Hills where you passed through them?—It is a very pretty rolling country, with copses of poplar timber interspersed through it.

Q. Are the Hills large?—No; they are mere mounds, fifty or sixty feet above the general level.

Q. Do they present any difficulties in the way of a railway passing through them?—I cannot say they do.

*By the Hon. Mr. Macpherson:—*

Q. These hills do not deserve the name of hills?—No; the north side of the Touchwood Hills appears high; however, that may be owing to the depression of the valley intervening.

*By the Hon. Mr. Aikins:—*

Q. What is the character of the country from the Touchwood Hills to the South Saskatchewan, where you crossed?—It is an undulating, treeless prairie.

*By the Hon. Mr. Macpherson:—*

Q. Did you survey any part of that line?—I belonged to a surveying party

under Mr. Frank Moberley, who travelled through that country to report on its general features. There was no survey made, but we measured the distance with an odometer, which we had attached to the cart wheel. It was a mere exploratory expedition.

*By the Hon. Mr. Vidal:—*

Q. Did you call at Fort Edmonton on the way?—Yes; several times.

Q. From Fort Edmonton, did you follow the course of the river, or did you keep in a more direct line?—I have been nearly along the located line of railway, between both crossings of the Saskatchewan.

Q. What is the character of the country from Edmonton west to the Rocky Mountains?—From my own knowledge, I can only speak of the country from Edmonton as far as Jasper House.

*By the Hon. Mr. Scott:—*

Q. How is it there?—I consider it a worthless country for any purpose.

*By the Hon. Mr. Aikins:—*

Q. What distance would that be?—I assume it would be about 205 miles by the trail I took; of course the line is shorter. It is, I think, about 160 miles by the line.

*By the Hon. Mr. Scott:—*

Q. Did you go any distance either north or south of the line?—I went both north and south along it. So far as I could see, the line generally follows near the line that I recommended.

Q. Is there a better country north or south?—The country is worse, I think, to the south, because it is higher.

Q. Is it there that the North Saskatchewan takes its rise?—Yes; the dip of the country is towards the north, and, consequently, you get a better country; as you go north the climate ameliorates, as the decrease in elevation compensates for the higher latitude. I went from Fort Edmonton to Fort Assiniboine, and from Fort Assiniboine to Lesser Slave Lake; then I skirted Lesser Slave Lake to the west; then across Peace River in a north-westerly direction; then westward to Dunvegan; from Dunvegan we crossed Peace River again to the south side, and went back into the country 15 or 20 miles south of Peace River. We then continued westward until we came to Fort Saint John; thence we crossed the river to the north side and went opposite to Hudson's Hope. We then went over the portage, took a boat, and ascended Peace River to the Parsnip River. The Parsnip is the south-west branch of the Peace River. That was in the month of October. I arrived at McLeod's Fort on the 5th November.

*By the Hon. Mr. Wilmot:—*

Q. Was there snow on the ground at the time?—Yes; five or six inches. Then we walked down from Fort McLeod to Fort James, then from Fort James we walked along Stewart Lake to Cross Lake, and from Cross Lake to Babine Lake, down to the forks of the Skeena; thence across to the Naas and down to the sea.

*By the Hon. Mr. Macpherson:—*

Q. You did that on foot?—Yes; in the winter—in January, on snow-shoes.

Q. Was the snow very heavy?—The deepest I experienced was about three feet. Near the coast the snow increased in depth.

Q. With regard to the tract of country you speak of as worthless; what are the general features of it; is it rocky?—It is an elevated swampy country, full of muskegs, all timbered with spruce and tamarac; in appearance much like the country north of Lake Superior.

*By the Hon. Mr. Wilmot:—*

Q. What is the size of the timber?—It is from two feet to three feet in diameter, as far as I can remember—that is the spruce timber.

*By the Hon. Mr. Vidal:—*

Q. What is the sub-soil?—Clay, I think, and gravel in places. I don't think it is at all fit for cultivation. The country is 3,000 feet above the level of the sea. From the time you leave Fort Edmonton until you get to Jasper House the average is 2,500 feet above the sea. The country between Edmonton and Athabasca River to

Fort Assiniboine is a very fair country, good land and partially timbered. It is rough in places, but cultivatable. Between the Fort Assiniboine and the Lesser Slave Lake the country is even worse than that I have described, beyond Edmonton. We passed over an elevation of 4,000 feet above the level of the sea, it is nothing but a spur of the Rocky mountains. At Lesser Slave Lake (which is about the same level as Edmonton) the country improves. Along the south shore of the lake blue-joint grass grows luxuriantly. From Lesser Slave Lake to the Peace River, it is a beautiful country. The distance is about sixty to seventy miles. The situation as shown on the map is erroneous, as Slave Lake is about seventy miles in length. The country in that vicinity is very fine and it improves as you go west.

Q. How wide is the valley of the Peace River?—The bed of the River is about 400 yards wide at the forks of the Smoky River, and the valley is about a mile and a half wide there. The river itself varies in width from 200 to 500 yards. It is the most beautiful country I have ever seen. As we rode out to the Peace River from Slave Lake we emerged suddenly from the woods upon a plateau, and the scene that burst upon us was beautiful beyond description. We could trace Peace River flowing through the valley for miles, as far as the eye could reach.

*By the Hon. Mr. Scott:—*

Q. Are there any settlers there?—No.

Q. How far up is the highest settlement in the neighbourhood of Edmonton; Is there any at St. Albert Mission?—There is a Roman Catholic Mission nine miles from Edmonton. Then there is another Mission further west, at St. Ann; then there is another to the northward at Lake La Biche.

*By the Hon. Mr. Scott:—*

Q. Is there no population beyond that?—Very little more; a few scattered settlers when I was there six or seven months ago.

*By the Hon. Mr. Haythorne:—*

Q. Is the body of water in the Peace River very large?—Yes; at the time I saw it the Peace River would float any of the St. Lawrence steamers.

Q. Was that height of water permanent during the dry season?—I think so. There is no doubt from Smoky River up to the Rocky Mountains Portage it is navigable—it is 500 yards from bank to bank at the Falls of the Smoky River.

Q. Did you measure it?—No, I did not measure it, but I sighted my rifle to 500 yards and fired several shots, and the bullets struck the edge of the water at that distance. It varies from 200 to 500 yards in width at the Rocky Mountain Portage. The river flows out of the Rocky Mountains, through a valley six or seven hundred feet below the general level of the country.

Q. How far?—It is about a hundred miles at least from east to west.

Q. Have you ever gone through that country south towards Fort George from the Peace River Pass?—I went up the Peace River to McLeod Lake.

Q. Where does it empty itself?—It is a branch of the Mackenzie River, and empties itself into the Arctic Ocean; it drains a great portion of the country west of the Rocky Mountains in British Columbia. The Parsnip River is west of that. The country about Peace River is, in my estimation, a better country than Manitoba; its agricultural and pastoral capabilities are better than those of the Red River country.

*By the Hon. Mr. Scott:—*

Q. Is there any great extent of this good country?—I can only speak of what I know. I know it extends to a considerable distance to the north; I know that wheat has been grown 300 miles north of Dunvegan. There is no doubt about that, for I have seen vegetables, such as potatoes and onions growing at Fort Saint John that could not have been excelled anywhere. The vegetation is rich and luxuriant. In the Peace River region the Indian peas attains perfection and a larger size than on the Saskatchewan—they transport them to Edmonton. This is a sure indication of a good quality of soil and climate. The elevation of the country is about 1,800 feet above the level of the sea. I have never been at Fort George, my instructions from Mr. Fleming were to examine parts of the Skeena, but I found it impossible to descend the Skeena at that time of the year, and I went down the Naas.

*-By the Hon. Mr. Vidal:—*

Q. How far were you from Fort George?—I was at Fort St. James.

*By the Hon. Mr. Aikins:*

Q. Is it possible to form a railway connection with Fort George by the Southern Peace River country?—I think so.

Q. Are you aware whether it has been explored from the head of Peace River, south?—I do not think it would be advisable to carry a line through the Peace River Pass, but I have every reason to believe that the Pine River Pass is very low. I was the first to advocate its adoption four years ago. I started from Fort Saint John accompanied by some Indians, and was upon the point of starting for Fort McLeod *via* this pass when the Indians refused to proceed and said we had better go up the Peace River, so that I was obliged to abandon the expedition. When I arrived at Fort McLeod I was determined to go eastward to examine the Pine River Pass but I could get no Indians to go with me, and I was obliged to abandon the project altogether. The Indians told me they could easily take horses through the Pine River Pass. The mountains are very low there, and recede very far on each side. Surveys have been made as far as Fort George and we know that from *Giscombe* Portage to McLeod Lake there is a very level stretch of river, and from McLeod's Lake there is every probability that communication may be had to the eastward through.

*By the Hon. Mr. Macpherson:—*

Q. You say there can be communication between Bute Inlet and Fort George?—Yes; I believe so, the reports affirm so.

Q. Describe the country through which you passed down to the coast?—I came out at the Naas near the Portland channel.

*By the Hon. Mr. Vidal:—*

Q. Would not the elevated tract of country east of the Pine River Pass afford serious obstacles to railway construction?—It is my impression that the line running farther north than the present located and projected line would be actually shorter, making Fort George the objective point. Between Edmonton and Fort Assiniboine, the country is good; but between Fort Assiniboine and Lesser Slave Lake, the country is utterly useless. I have passed through twenty-five swamps in a single day, from a quarter to a half mile long. There is abundance of blue-berries in them, which is always a bad sign of the soil.

*By the Hon. Mr. Wilmot:—*

Q. Does the climate get milder as you go north?—In the month of October, in travelling along these plains near the Peace River, I observed the thermometer at 75° fahr. in the shade. This was in October. We had warm days and rather cold nights, but the weather was beautiful.

*By the Hon. Mr. Vidal:—*

Is not the frost very severe there in the winter?—It is a dry cold; the snow never packs. They told me in Dunvegan that in December the Indians often go out in their moccasins only, without snow-shoes. The snow is generally so dry that it never packs. Cattle and horses can winter out there.

The Committee adjourned at one, p.m.

FRIDAY, 20th April, 1877.

The Committee met at eleven-o'clock, but adjourned for want of a quorum.

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OTTAWA, Saturday 21st April, 1877.

The Committee met at 11 a.m.

MR. SANDFORD FLEMING was called and examined as follows:—

*By the Hon. Mr. Scott:—*

Q. Why was the located line selected in preference to a line that might have gone by Sturgeon Falls between Lake Superior and Lake of the Woods?—An effort was made to get the most direct line between Thunder Bay and the only point where it was considered that the Lake of the Woods could be crossed, at the outlet at Rat Portage. We began by making surveys directly on that line from both ends; we spent a whole season and the following winter and part of the following year, but we failed to find a practicable line in the direction referred to east of Rat Portage. We were driven to look for a line further to the north, and we succeeded in finding one more northerly than the one first attempted and very much in the position of the present located line. Some time afterwards, the importance of getting a direct route that would tap the navigable waters of Rainy Lake at Sturgeon Falls, being fully understood, we again attempted to get a line for a railway in that direction. We succeeded in getting a practicable line from the east to Sturgeon Falls; and a little distance further west, but where we encountered an exceedingly rocky, broken, rough, impracticable country, and we were compelled to abandon any further examinations in that direction. We could have found a good line running north from Sturgeon Falls to the lake called Wabigon Lake, intersecting the located line in the neighbourhood of Wabigon Lake. It was found, however, that the detour would be so great, and the distance would be increased so much, that it was thought inadvisable to locate the line by Sturgeon Falls, and considered better to find the most direct line for the railway from the Wabigon Lake to the westerly end of Lac de Mille Lacs, and thence to Thunder Bay. I should state here that we have made surveys in every conceivable direction through the whole of that country, and I feel satisfied we have now got the line located on the shortest and best route that can be had between Rat Portage and Thunder Bay. I do not mean to say that it cannot be improved; as I hope we shall yet be able to improve the located line in some parts before construction actually begins.

*By Hon. Mr. Macpherson:—*

Q. Had you the country between Sturgeon Falls and Lake of the Woods thoroughly surveyed and explored?—Yes, we went in from both ends and had explorations made, but the reports were so extremely unsatisfactory that we did not deem it advisable to make further surveys. Instrumental surveys were continued, but we were driven off the direct line altogether.

Q. Did the explorations extend north and south over a considerable portion of the country?—Yes; they explored to the right and left over a considerable area?

Q. You spoke of Rat Portage as being the only place where the Lake of the Woods could be crossed?—The question of crossing the Lake of the Woods itself at another point by a number of islands, had been considered, but the expense would be very great indeed, and the policy of crossing these wide stretches of waters is very questionable.

*By the Hon. Mr. Aikins:—*

Q. What is the character of the country east of the Narrows of the Lake of the Woods?—The country is very much like a continuation of the Lake of the Woods, full of lakes and islands—about as much water as land. You can hardly tell where the lake begins and where the land ends. That is the general character of the country.

Q. Is it so north of Sturgeon Falls, as well as west?—Yes, north and west from Sturgeon Falls. I speak of what is called the country to the east of Lake of the Woods. It is full of islands and inlets and deep water filled channels.



*By the Hon. Mr. Sutherland:—*

Q. Would not a line from Sturgeon Falls, through the Narrows, to Winnipeg, be much shorter?—Yes, if you could get a line. There is another point of importance in connection with it—it would pass very near the American territory. I do not think we could get a line through by the Narrows, at all; there are so many things that are really impracticable. An attempt was made, nearer home, to cross a lake much smaller than that—I refer to Rice Lake—and it failed, after a great deal of money had been expended on it.

*By the Hon. Mr. Aikens:—*

Q. What is the distance between the islands at the Narrows?—I really cannot tell you without referring to the profiles.

Q. Would not the consideration of being able to use the navigable waters from Sturgeon Falls and the north arms of Lake of the Woods have justified a larger outlay in the construction of a road on the southern than on the northern line?—It would, certainly, but we found no practicable line at all.

*By Hon. Mr. Macpherson:—*

Q. What is the length of the line from Thunder Bay to Selkirk?—410 miles; from Selkirk to Rat Portage it is 117 miles.

Q. What is the distance by the other route from Thunder Bay *via* Sturgeon Falls?—I could not tell you; there is no other route except what you may draw on the map yourself. We have found no other route.

Q. From Sturgeon Falls westward, as far as examined, are there any considerable difficulties in the way of railway construction?—For fourteen miles west of Sturgeon Falls there is no great difficulty, but after that serious difficulties continue all the way.

*By Hon. Mr. Scott:—*

Q. You say you have obtained what you consider exhaustive information as to this country from the point fourteen miles west of Sturgeon Falls to the Narrows?—Yes.

Q. And you are prepared to say that no feasible line can be found there?—I am very unwilling to say there is no practicable line, but I am not prepared to report on any practicable line. I am very unwilling to say it is impracticable because we do not like to admit there is anything impracticable in engineering, but it is on that ground alone.

Q. Would the expense be greater even if the line were shorter, than the expense involved in the longer line northward?—From the inspection of the map it would appear that the distance would be shorter; I do not know how many miles, but I am sure that when you came to make the survey you would have to diverge so much from a straight line to get a proper grade that it would be greatly increased in length. It is a most difficult, broken country. The crossing of the Lake of the Woods is, in my opinion, entirely out of the question. I am aware that Mr. Dawson thinks differently—that it could be done.

*By the Hon. Mr. Sutherland:—*

Q. Did you have soundings made at the crossing of the lake?—No; we accepted Mr. Dawson's soundings as being correct.

*By the Hon. Mr. Scott:—*

Q. Have you any estimate as to what the crossing at the Narrows would cost?—No.

Q. Is it so serious as not to justify you in making an estimate?—Yes; it was so serious a matter, that the idea of making an estimate was never entertained.

*By the Hon. Mr. Macpherson:—*

Q. How is the country on the located line, from Thunder Bay to Selkirk, for settlement?—There is not much of it fit for settlement. There is some good land between Thunder Bay and the height of land. There are several fair townships in there; but on the height of land there will not be many agricultural settlers.

*By the Hon. Mr. Simpson :—*

Q. How far west do you mean?—It is nearly north rather than west; as far as Shebandowan, about forty miles, perhaps.

*By the Hon. Mr. Macpherson :—*

Q. From Thunder Bay to Selkirk, along the located line, there is very little land fit for settlement. Is there not a much greater area of land fit for settlement, on a line in the neighbourhood of the Dawson route?—There is some good land along Rainy River, one side of which belongs to us. There is not much good land around Lake of the Woods; it is very low and swampy on one side, and rocky and broken on the other.

*By the Hon. Mr. Haythorne :—*

Q. Is the land between Lonely Lake and English River good?—There may be some good patches of land on Wabigon River fit for settlement, but it is not inviting for agricultural purposes. There is some good land on Rainy River, but wherever the good land occurs it is in a measure accessible by railway, whatever line may be chosen.

*By the Hon. Mr. Aikins :—*

Q. In speaking of the located line, it touches the waters of Lac de Mille Lacs, why then is it continued to English River; is it under contract?—This portion is under contract.

Q. What is the object of putting that under contract when the intermediate link, west of English River, is not to be built for some time to come?—The trial survey has been finished, but the location line has not been completed. It is not proposed to put it under contract this summer, but there is no idea of abandoning it.

Q. The statement has been made by the Premier that it is the intention to use the water navigation for a number of years, and is there any reason why that portion from Lac de Mille Lacs to English River should be put under contract when the intermediate link is not to be proceeded with?—The intention must be this: it is very obvious that the country beyond English River is inaccessible without a railway or water communication to it. This railway will enable contractors to get in supplies and plant to build the portion beyond English River.

Q. But if it is not the intention to proceed with the portion beyond English River for some years, what is the object of proceeding with the section from Lac de Mille Lacs to English River?—It will be so much done.

*By the Hon. Mr. Macpherson :—*

Q. But if there is no connection beyond English River and the road ends in the woods, what is the object of proceeding with the detached link?—I cannot very well answer the question, because it is quite new to me that it is not intended to go on. I understood that it was to go on as soon as possible. I was not aware of the reasons or facts you have stated until now.

*By the Hon. Mr. Scott :—*

Q. Is not that forty mile section simply the grading?—Yes; grading, rail laying and ballasting. I should add the instructions to the contractors now is to do that forty miles last. The instructions from the Minister of Public Works is not to push the work on that portion beyond Savanne until the last.

Q. When do you expect to have the road completed to Port Savanne?—Next September probably the track may be laid.

Q. When do you expect to have it completed to English River?—In about two years.

Q. Have you not the right under those contracts to suspend operations at any time?—Yes.

Q. What is the distance to Port Savanne from Fort William?—About seventy miles.

Q. What sort of a line is it?—A very good line.

Q. Can you give us any idea of what it will cost?—I can furnish the amount of the contract. I would rather not say what it will cost; I really do not know at this moment.

*By the Hon. Mr. Aikens :—*

Q. Has the track been cut out for the telegraph line?—The telegraph is being erected on the line of the Railway, and the clearing has been done by the telegraph contractors. They precede those who have the contract for the grading of the Railway.

Q. From Fort William to Savanne has there been any divergence of the Railway from the line on which the telegraph was erected?—I do not know that there has; there may be; but I have not heard of any yet.

Q. What extent of navigation will be open from the end of the Railway at Port Savanne west?—Navigation will be open to the extreme end of Lac des Mille Lacs; then a number of portages and water-stretches will begin.

Q. How many portages will be avoided by the construction of the Railway from Fort William to Savanne?—There will be the long portage from Fort William to Shebandowan, 45 miles; the next one is the lift from Shebandowan to Kashabowie; the next from Kashabowie to Lac des Mille Lacs—three portages in all.

*By the Hon. Mr. Simpson :—*

Q. What is the extent of those portages?—About 46 miles altogether; there are two of them very short; the two together will not exceed a mile and three-quarters.

*By the Hon. Mr. Aikens :—*

Q. How many portages will there be from Port Savanne to Lake of the Woods?—I could not say exactly without referring to my report. The report of the Minister of Public Works estimates the total length of land carriage saved between Thunder Bay and Lac de Mille Lacs will be forty-six and three-quarters miles.

*By the Hon. Mr. Macpherson :—*

Q. Then how many portages between Lac des Mille Lacs and Lake of the Woods?—Eight.

Q. Does that include Fort Francis Lock?—No, it is exclusive of Fort Francis; eight to Rainy Lake.

*By the Hon. Mr. Simpson :—*

Q. What would be the length of those eight portages?—Six miles and a half.

*By the Hon. Mr. Macpherson :—*

Q. What is the difference of level?—The fall is very considerable; it must be from three hundred to four hundred feet.

Q. Do you think any trade could be carried on over those portages between the terminus of the railway and Lake of the Woods?—It would be very awkward to do any trade over those eight portages, without appliances of some kind—it would be very tedious and awkward.

Q. We have been told by some of the witnesses that, starting from Keewatin and dropping a little southwards so as to strike Red River about midway between Winnipeg and Selkirk, the road would be much easier of construction, and the land would be more available for settlement than on the located line; is that the case?—We tried that, but we did not find it so; we found the rock work was shorter, but it was heavier; we hoped to get a line that way, and thought it would be cheaper, but we did not succeed; we made several surveys through there; we made a survey directly from Keewatin to the crossing of Red River, midway between Winnipeg and Selkirk; that was simply to ascertain as to the practicability of a line of any kind; but we found from Rat Portage, some thirty miles west, the country was very rough; then, in order to obviate the rough section, we made another survey further south near the Lake of the Woods; we succeeded in getting through the rough country by a line somewhat shorter, but the cost of construction was not lessened thereby, the country being rougher. Having ascertained that, we fell back on the original line and proceeded to improve that one as far as we could.

Q. What is the character of the land between Keewatin and Red River, on the southerly line, as compared with that on the located line?—None of the country is particularly good; it is either very rocky or flat and wet; the best of the land is not there.

Q. What is the difference in the construction of the southerly line as compared

with the located line from Keewatin to the Red River?—You avoid some of the rough country on the southerly line as far as length is concerned, but not in magnitude. It increases in magnitude as you go south.

*By the Hon. Mr. Haythorne :—*

Q. Then as to saving in cost of construction, you would make nothing by adopting the southern route?—No, the cost would be greater on the southern line, and for that reason we fell back on the northern line.

*By the Hon. Mr. Macpherson :—*

Q. Is the country adjacent to the located line better adapted for settlement than the country along the southern line?—I fancy there is not much difference. I have gone over the country on the southern line, and there is a great deal of it rough land. The country south of the located line is much better than it is to the north.

*By the Hon. Mr. Scott :—*

Q. What is the character of the country along the Winnipeg River?—It is not very good land.

*By the Hon. Mr. Macpherson :—*

Q. Is not your information of that country all obtained from your assistants?—I have gone through the country myself, and from Winnipeg west, but in a hasty way, and I must rely for information on my assistants.

(Mr. Fleming here submitted a map of the North-West Territories, showing the fertile belt as defined in Hind's report, and extended by himself, from information obtained by the Pacific Railway explorations to prove that the line as located from Keewatin west to the Rocky Mountains passes nearer the centre of the fertile belt than if it had been located further south *via* Winnipeg, south of Lake Manitoba, and thence by the Little Saskatchewan south of the cart trail.)

Q. Now, we desire to get the best line from Keewatin west—not only the route for a railway, but the best country to pass through; and we think it would be doing nothing more than justice to the pioneers of that territory, if it can be done without serious loss or additional expense, to have a line surveyed south of Lake Manitoba?—I have no doubt your view is perfectly correct, as far as that point is concerned. It would go through a very fine country from Winnipeg nearly as far as Fort Ellice, but beyond that you would have to pass through land not very good—indeed some of it very bad—and if you attempt to build a road on that line, you will find difficulties far greater and increase the length of the line. I look upon the line passing through the Narrows of Lake Manitoba as being of very great importance, as it taps the wooded country that is so necessary to supply fuel and timber. If the southern line were adopted, the road would have to pass through a country destitute of timber. When I first began this survey I studied the reports of scientific explorers that preceded me, such as Pelessier and Hind, and I made up my mind from them to seek for a line exactly on the route you advocate, running south of Lake Manitoba towards Fort Ellice, and in that direction. We made explorations with that object in view, but we found the difficulties were too serious and we got into a country that was not desirable. I then had enquiries made in another direction, so as to obviate these difficulties; but we found that we could get through by Swan River valley to the west side of Lake Winnipegosis, and thence south-easterly between Lake Manitoba and the Riding Mountains. In that direction we would obtain a line for a railway easy of construction and passing through a country in some places well wooded, which I consider a very important consideration. On further investigation I found we could save a considerable distance by crossing the Narrows of Lake Manitoba. A survey was made in that direction, and it was found that between a point called Norkeote on the map and Selkirk at Red River, almost an air-line could be had with works of construction of an extremely light character. Of course, the crossing of the lake at the Narrows would be somewhat heavy, but nothing to be compared with the saving in distance to be effected. These are, in rough, the steps that guided me in getting this location. I can readily understand members thinking that we arrived at it in a haphazard way, but we did not; we arrived at it step by step, and we have adopted the best line, having the interests of the whole country in view.

*By the Hon. Mr. Sutherland:—*

Q. Do you believe that the located line from Keewatin to Caerlaverock is really shorter than a line further south?—My impression is it is considerably shorter.

Q. How much shorter?—I really cannot say, not knowing where the difficulties are. It is not fair, nor is it correct, to measure an air line on the map, and then compare it with the located line. I have no doubt that the located line would be found shorter from Keewatin to Caerlaverock than the line proposed by Mr. Jarvis.

Q. Why was Selkirk fixed upon as the crossing point on Red River?—After making inquiries, we found that the country was occasionally flooded with water in the neighbourhood of Winnipeg, and for many miles around, but it had never been known to be flooded in the neighbourhood of Selkirk in the memory of man. The city of Winnipeg is situated in a locality that is occasionally one vast sheet of water, probably ten or twelve miles broad, and we do not know but that it may recur any spring.

Q. How long is it since that has happened?—I think there is a gentleman here who has seen it on two occasions. It was flooded in that way I think in 1852 and in 1861.

*By the Hon. Mr. Wilmot:—*

Q. What is the difference in elevation between Selkirk and Winnipeg?—You will find from the best sources that the country in the immediate neighbourhood of Selkirk has never been known to have been flooded, and that is one of the chief reasons why it was selected as the crossing point.

Q. Was it selected on your recommendation?—Yes, it was.

Q. Would it be a very serious undertaking to survey a line through the country from Keewatin, south of Lake Manitoba, and west to Caerlaverock crossing the Little Saskatchewan at about 12 miles south of the cart trail, and uniting with the located line at or about Caerlaverock?—It could easily be done in one season by two parties, and it would not be very expensive.

*By the Hon. Mr. Haythorne:—*

Q. It has been stated that wide reserves which have been made for roads in the Province of Manitoba could be utilized for right of way for the railway; could that be done?—It might be done if the settlers would concur in it, but it could have been done easier before the country was settled and before the settlers acquired rights.

Q. What would be the cost of surveying a line of railway from Winnipeg west through Manitoba?—I could not say.

I wish to mention that a member of this Committee stated on a former occasion that a boat was taken through Mossy Portage from Cedar Lake to Lake Winnipegosis; and I said on that occasion, that I did not think it could possibly be done without dragging it up forty feet of an elevation. From diagram No. 11, of my report of 1874, it will be seen that the elevation is ninety-one feet, so that the boat would have to be dragged over that height instead of floated over the portage.

*By the Hon. Mr. Sutherland:—*

Q. Who took that level?—Mr. Bender took it, I think.

## ADDENDA

TO MR. FLEMING'S EVIDENCE.

*Replies to Questions by the Hon. Mr. Aikins.*

The distance, as measured on the map, from Selkirk to the Point A on the Little Saskatchewan, thence direct to the intersection of Shell River with the River Assiniboine, thence direct to Caerlaverock, is about 505 miles. This is the length of air lines between the points referred to.

It is not probable that a line for a railway of any description could be had on the air lines, on account of the difficulties which present themselves, and which are alluded to in my letter to the Chairman of the Committee (24th April, 1877). I have no doubt whatever that before a line could be found, if at all, within a reasonable expenditure, it would have to curve and twist down and up the sides of the deep valleys on heavy gradients, thus considerably increasing the length above stated. The distance by the located line between Selkirk and Caerlaverock is 503 miles.

The following letter was submitted to the Committee by the Chairman, subsequent to the evidence being taken:—

CANADIAN PACIFIC RAILWAY,  
OFFICE OF THE ENGINEER-IN-CHIEF,  
OTTAWA, 24th April, 1877.

The Hon. M. A. GIRARD, Chairman Committee on the route of the Canadian Pacific Railway from Keewatin, westward.

SIR,—Having given some evidence before the Committee, of which you are Chairman, I think it is my duty, as a public officer, to ask permission to give some fuller explanation on the subject than I may have done in the evidence which has been presented to your Committee, and which, from the manner in which it was elicited, must necessarily appear disjointed and imperfect.

There seems to be an impression,—1st. That the Railway line should run in a more direct course from the point designated Keewatin, to the point designated Caerlaverock on the map. The first is at the outlet of Lake of the Woods; the second is near the head of the North Saskatchewan.

2nd. That the line between these extreme points should rather have bended southerly from a direct course, than northerly as shown on the map.

3rd. That the line should have crossed the Red River at Fort Garry, or at some point not far from Winnipeg, instead of at the point designated Selkirk.

4th. That the line should have followed a course as nearly due west as practicable, from Fort Garry until it reached the neighborhood of Fort Ellice and thence turned north-westward towards Caerlaverock.

These impressions appearing to prevail; it is proper that I should endeavour to explain why I have been led to favour another route.

When the duty of conducting the survey was intrusted to me in the spring of 1871, the first views which I formed were precisely similar to those now held by members of the Committee. I sent out in that year an exploring expedition to make a general examination of the country. The examination was made by Mr. Frank Moberly, Mr. Ermatinger, Mr. Nicol and Mr. Horetzky.

At the close of the year it was reported to me as follows:—

“From Fort Garry to third crossing White Mud River (Palestine), a distance of 96 miles, the country is a perfectly even prairie with no large streams or gullies; soil rich, clay and clay loam; there is some fine oak, elm, maple and poplar.”

"From third crossing of White Mud to the Little Saskatchewan, a distance of 49 miles, the rise to second prairie steppe (or Riding Mountains) is made; the country is very much broken by sand and gravel ridges, and is thickly wooded with small poplar."

"The Little Saskatchewan Valley is the first obstacle of any importance; it is 5,000 feet wide, 184 feet deep, and has no lateral valleys of any length."

"From Little Saskatchewan to Bird Tail Creek, a distance of 58 miles, the country is rather rolling, with small alkaline ponds in hollows; soil, gravelly."

"The valley of Bird Tail Creek is 3,400 feet wide and 140 feet deep; it also has lateral gullies."

"From Bird Tail Creek to Shell River, a distance of 38 miles, the country is rolling, getting rougher as you go back from the Assiniboine; there are also great numbers of small lakes and ponds, plenty of small poplar; soil, clay and gravel. The valley of Shell River is 3,700 feet wide and is 284 feet in depth; and would be very difficult to cross."

\* \* \* \*

"The country from White Mud River to Fort Pelly is not favorable for settlement, the soil being generally light, a good deal of the water alkaline; summer frosts frequent."

"From Fort Pelly to South Saskatchewan, a distance of 226 miles, the country is rather rolling until we approach the river, where for twenty-five or thirty miles a succession of ridges rise to about 80 or 100 feet; but these have easy slopes and numbers of openings. On this part of the line we passed several large lakes, the largest being Quill Lake, which is from thirty to thirty-five miles in length; and the water is so alkaline as to be unfit for use. Soil is principally clay and sandy loam, with great numbers of boulders; the water in all the running streams is invariably fresh and good; very little timber."

"A comparatively easy crossing of the South Saskatchewan was found at lat. 52° 22' 12"; at this point the approach to the river is easy, and from 50 to 60 feet above the level of the water, which at mid-stream was about ten feet deep. The bridges will probably require to be about 1,400 feet long; banks and bottom are sand mixed with large gravel and boulders."

\* \* \* \*

"Mr. Ermatinger's examination from Touchwood Hills to Fort Ellice and Souris River, shewed that the bridging of all the streams in that direction would be very great, and there would be no advantage gained by carrying the railway along the general direction of the Assiniboine."

"Generally speaking, the country extending from about Fort Pelly by Souris River and between the Riding Mountains and Lake Manitoba, to Prairie Portage near Fort Garry, is, for the most part, well wooded and the soil of excellent quality."

"Having now completed a general examination of the several routes indicated by you, I am satisfied, from what I have seen and learned, that the most eligible route for a railway will be found to extend from Fort Garry to the north of Duck Mountains, passing between the Thunder and Porcupine Hills, crossing the South Saskatchewan in latitude 52° 22' 12""

\* \* \* \*

"From the level of Fort Pelly there is no difficulty in descending by the valley of Swan River to the low ground east of the Duck Mountains. From Swan River the country lying north of Duck and Riding Mountains was found, on examination, to be nearly level, thickly wooded with spruce, poplar and some maple; a few small lakes and marshes were also found; soil, sandy loam, and admirably fitted for farming."

\* \* \* \*

In the year 1872, I made a personal reconnoissance of the country, and satisfied myself that the difficulties to be met on the route I had previously hoped to find eligible, were of a serious character; that the fine rich soil first seen in Manitoba

terminated not far from Fort Ellice, and that to carry the line thence northwesterly would be to pass out of the leading direction of the fertile belt, and avoid much good land elsewhere found.

In the years 1873 and 1874, further examinations were made, an outline of which is given in my report of this year, pages 38, 39 and 40, and in Appendix page 185.

In the years 1875 and 1876, other surveys were made, during which the country embraced within the limits of the enquiry of the Committee, was frequently traversed. Mr. H. A. F. Macleod, one of the Engineers so engaged, examined the river valley, which would require to be crossed on the route now indicated, but at other points than those which Mr. Moberly reported in, with the following result:—

—“The first engineering difficulty encountered in running a line either from Selkirk or Winnipeg, is the crossing of the Little Saskatchewan, which, at the Fort Ellice cart trail, is at least half a mile wide and 200 feet deep.”

“Bird Tail Creek is the next, the valley of which at the cart trail is half a mile wide and 120 feet deep.”

“Snake Creek is another deep valley, six miles to the east of Ellice, its depth is about 100 feet and a quarter of a mile wide.”

“The valley of the Assiniboine at Ellice is about one mile wide, and 220 feet deep; the river, 200 feet wide, would require a waterway of 300 feet.”

“The Qu’Appelle Valley is also about one mile wide and 220 feet deep; near Ellice and the river 120 feet wide would require waterway of 200 feet.

“Cut Arm Creek is about a quarter of a mile wide and 100 feet deep; stream 30 feet.

“On the Mounted Police trail from Shoal Lake, which joins the Ellice and Pelly trail nearly opposite Shell River, the crossing of Bird-Tail Creek is about one mile wide and 200 feet deep, with high hilly country on each side.

“The crossing of the Assiniboine at Shell River is about one mile wide and 370 feet deep. The country to the east rises to a height of 800 feet above the river, along the trail leading to Shoal Lake.

“The soil between Winnipeg and White Mud River is very good, particularly near Winnipeg and near Portage La Prairie. There are also considerable tracts of marshy ground interspersed with lakes and ponds.

“To the west of White Mud River the soil is not so good, and marshes are more frequent.”

“Near the Little Saskatchewan the soil is poor, hilly, with numerous small lakes.”

“Between the Little Saskatchewan and Ellice the soil is poor, and becomes very stony to the west of Bird Tail Creek.”

“About Ellice and the valley of the Qu’Appelle the soil is poor and sandy and continues so across the plains to Cut Arm Creek. On the west of this there is some good land, but generally across the Pheasant Hill Plains the soil is poor, gravelly, and stony.”

“The soil in the Touchwood Hills is generally light, with some good intervals, in the valleys. They rise in ridges of considerable height and fall off very abruptly on the west side, to the level of the Salt Plains.”

“The soil on the Salt Plains is generally poor, but improves to the north-west.”

“Between the Salt Plains and the South Saskatchewan, there is a considerable extent of hilly country, poor soil, with occasional intervals of good land.”

“The located line is deflected to the north, to pass those hills.”

These reports were made by gentlemen who had been specially intrusted at different times with the duty of examining the country in order to gain information which would enable us to find the best possible location for the Railway.

The information was confirmed by a general reconnaissance which I made personally in a journey through the country. If the statements made respecting the difficulties which are met on the southern route require further confirmation, I would wish to lay before the Committee the results of a fourth independent survey. I have before me a profile from actual measurements and levels, dated 13th May,



1876, made by Montague Aldous, in connection with the work of the Assistant Surveyor General, Mr. Lindsay Russell. This profile extends from the south end of Lake Manitoba westward by Fort Ellice, to a point on the 102nd meridian to the west of River Assiniboine, and thence north to the 8th Base line. It crosses several of the deep valleys already alluded to, but at points on some of them, if not on all, not previously examined.

It will be quite sufficient to state the extreme width and depth of some of the valleys delineated on this profile—on a stretch of less than 150 miles.

1. Ravine,	1	mile wide	60 feet deep.
2. " "	$\frac{1}{2}$	"	70 "
3. Little Saskatchewan,	$3\frac{1}{2}$	"	190 "
4. Bird River Creek,	$2\frac{1}{2}$	"	175 "
5. Ravine,	$\frac{1}{2}$	"	100 "
6. Snake Creek,	$\frac{1}{2}$	"	160 "
7. Ravine,	$\frac{1}{2}$	"	130 "
8. Assiniboine,	$1\frac{1}{2}$	"	220 "
9. Ravine,	$\frac{1}{2}$	"	130 "
10. " "	$\frac{1}{2}$	"	90 "
11. " "	$\frac{1}{2}$	"	60 "
12. " "	$\frac{1}{2}$	"	50 "
13. " "	$\frac{1}{2}$	"	290 "
14. " "	$\frac{1}{2}$	"	240 "
15. Qu'Appelle,	$2\frac{1}{2}$	"	450 "
16. Ravine,	$\frac{1}{2}$	"	50 "
17. Little Cut Arm,	$\frac{1}{2}$	"	130 "

I am quite prepared to admit that a careful survey would probably result in finding better crossings than the above, perhaps in avoiding some of them altogether, but it is perfectly clear that the dimensions of the valleys, established by actual measurement, are suggestive of works of construction of a really formidable character, and also gradients which could not be compared with those obtained on the located line.

I respectfully submit, the Committee will now be satisfied that, with the knowledge of the facts that I possessed, I would not have been justified in attempting to locate the railway on the route which I originally projected six years ago, in preference to the much more favourable route by the valley of Swan River and the Narrows of Lake Manitoba.

My first reports on the survey will show that I originally held that the railway should cross the Red River at Fort Garry; but enquiries established that the country in that quarter was liable to be overflowed; that where the town of Winnipeg is laid out, it has been overflowed three times within the recollection of persons now living in that neighborhood. On one of these occasions it is reported that the water was some four feet deep above the surface of the prairie for several miles in breadth, on each side of the site of the Town of Winnipeg, and for many miles north and south of it.

It was found that at the point now designated Selkirk, the banks of the river had never been known to be overflowed, and as at that place the Government controlled a block of land of some 600 acres, suitable for a town plot, it was decided to select that point for crossing the river.

I have already stated that, in order to avoid the heavy work and the equally heavy gradients which would necessarily be involved in crossing the deep and wide valleys on the route first projected, it was deemed advisable to descend from the higher prairie level, west of Fort Pelly, by the valley of Swan River. This course forced us to go round the northern flank of the Riding Mountains, by the detour shown on the map at "Northcote."

Thus between Keewatin and Caerlaverock, two main objective points were established, viz: at Selkirk and at Northcote; and it became necessary to connect these several points by the most direct line.

We have now the railway located from Keewatin to Caerlayerock, *via* Selkirk and Northcote, on what, I have reason to think, is the best general route that can be had. The works of construction are, on an average, light, and the gradients are so easy that the cost of transportation will, on the completion of the railway, be reduced to a minimum.

My report of this year will show that the highest gradients ascending eastward will only be half as steep as the ruling maximum gradients on the Grand Trunk. With regard to the great importance of this feature, I would wish to refer to my last report, pages 79, 80, 83 and 84. I doubt if it would be possible at any reasonable expense, to secure similar gradients on the more southern route originally projected.

Between Selkirk and Livingstone, the located line passes through a considerable extent of forest land. This is deemed of no little importance, in view of the supply which will thus be rendered accessible for building, fencing and for fuel, in the wide treeless prairies on other sections of the line. The railway will also be in a more sheltered position for so much of its course during the winter months.

The other line projected would tap no valuable groves of timber, and if the railway was established on it, this important advantage would be lost.

If the railway was designed to benefit Manitoba alone, and be extended no further than that Province, I admit that its location might be materially modified; but it has other purposes to serve—amongst others, the settlement of lands vastly more extensive than Manitoba. I respectfully submit that the location adopted will effect this object better than any other line that I am aware of. The map I prepared for the inspection of the Committee, must have satisfied those who examined it, that the located line, although it does not go through the middle of Manitoba, runs across a portion of that Province, and passes in a central direction through the great body of the fertile tracts in the North-West Territories.

On the located line, *via* Selkirk and Northcote, about \$481,147 have been expended on construction—\$165,910 to the west of Selkirk and \$315,237 to the east of that point—and heavy contracts have been let, so that it would not be possible now to change the location without serious loss and difficulty.

I shall not trouble you with any further information; I may, however, be permitted to remark that I think it is alike due to the Government and to myself that I should ask permission to submit these explanations as a portion of my evidence before your Committee. The Government was good enough to intrust to me the duty and responsibility of finding the best location for the Railway—through the vast territory through which it is projected, I felt from the very first that it was desirable to secure, if possible, a line running as much as could be through the centre of Manitoba, but the information which I obtained respecting the country west of Manitoba was not favorable. I was called upon, however, to establish the location without delay in order that the telegraph might be erected in the proper place. I felt that nothing would justify me in locating the line where difficulties so serious were known to exist; and that it would be a waste of time and money to make any further preliminary surveys in that direction. Action of some kind was called for—with the information I possessed I adopted the only course open, and proceeded to locate the work on the route shown on the map. A route which, in most essential particulars, is extremely favorable for the trunk line of the Pacific Railway system.

My opinion has always been that the main trunk line should be located on the shortest and best route, leaving isolated localities to be served by branches, whenever the traffic may justify their construction. In course of time I feel assured that many branches will be called for, and no doubt one of them will at an early day be projected to serve the more distant sections of Manitoba.

I have the honor to be, Sir,

Your obedient servant,

(Signed)

SANDFORD FLEMING.

*Engineer-in-Chief.*